FINAL REPORT
SMART⁺

2025

Ministry of Social Development
Health Directorate
Rajpur, Doti
Sudurpashchim Province
Nepal

SMART+ Survey
Final Report

Ministry of Social Development

Health Directorate

Rajpur, Doti

Sudurpashchim Province

Nepal

May 2025

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Government of Sudurpashchim Province

Ministry of Social Development

Dhangadhi,kailali

<u>Foreword</u>

It is with immense pride and satisfaction that the Ministry of Social Development, Sudurpashchim Province, releases the Final Report of the **SMART+ Survey** conducted in May 2025.

This landmark provincial level assessment represents a concerted effort to generate robust, localized evidence on the nutritional status of our children under five years-a critical foundation for informed policy-making and targeted interventions in our diverse and challenging terrain.

I wholeheartedly congratulate the entire team led by Dr. Khagendra Bam of the Health Directorate, including dedicated staffs from district health offices, local levels, survey enumerators, supervisors, and technical health development partners. Your unwavering commitment, technical expertise, and perseverance in often difficult field conditions have made this comprehensive survey possible.

A special acknowledgment to the communities of Sudurpashchim Province, particularly mothers and caregivers, for their generous cooperation and trust.

This report will serve as a vital tool in our ongoing mission to improve nutrition status and build a healthier future for the children of Sudurpashchim province.

Dr. Hemraj Regmi
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Message

The Department of Health Services, MoHP, extends warm appreciation for the SMART+ Survey conducted in Sudurpashchim Province in May 2025.

The report reflects exceptional standards in methodology, data quality, analysis, and presentation. Produced entirely by the provincial government team, it sets a new benchmark for nutrition assessment reports across Nepal, raising the bar for rigor, transparency, and utility in public health documentation.

The findings reveal a concerning nutrition situation in Sudurpashchim Province: stunting at 25.3%, underweight at 25.5%, and acute malnutrition (by weight-for-height) at 14.9% indicating a serious level of acute undernutrition according to WHO classification. These prevalence rates are notably higher than those reported in the Nepal Demographic and Health Survey (NDHS) 2022, which showed national averages of 25% stunting, 19% underweight, and 8% wasting. This contrast underscores the value of province-specific assessments in uncovering localized vulnerabilities that national surveys may not fully capture.

The results highlight the urgent need for increased and sustained investment in nutrition-specific and nutrition-sensitive interventions in Sudurpashchim Province. Strengthening community-based management of acute malnutrition, improving complementary feeding practices, scaling up micronutrient supplementation, and enhancing multi-sectoral coordination are critical priorities.

I congratulate the entire team for this outstanding achievement and commend the Provincial Health Directorate for their leadership with technical and operational support from development partners including UNICEF, ACF and HKl. Such collaboration demonstrates an exemplary model of partnership in generating high-quality, localized evidence for nutrition programming.
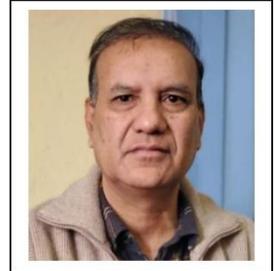
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Acknowledgement

The Sudurpashchim Provincial Health Directorate takes great pride in the successful completion of the SMART+ Survey in Sudurpashchim Province. This achievement reflects the collective efforts, dedication, and collaboration of numerous individuals, institutions, partners, and communities. On behalf of the Directorate, which served as the primary coordinating and organizing body, we extend our deepest gratitude to all who contributed their time, expertise, and resources to make this survey a success.

We are profoundly grateful to the Health Offices in all nine districts of Sudurpashchim Province and the local-level authorities for their invaluable coordination, logistical support, and facilitation of field activities. Their commitment at the grassroots level was essential to the survey's effective implementation.

We also extend special thanks to Mr. Narendra Singh Karki, DG, PHTC; Mr. Ramesh Malashi, Policy, Law, Standards, Plans and Public Health Division, MoSD; Dr. Chetraj Joshi, Hospital development and medical services division, MoSD Mr. Hemraj Khadka, HEdA, PHTC Mr. Om Prakash Joshi, PHA, PHTC and Mr. Ramesh Kunwar, PHA, Kailali Health Office, for their valuable advisory guidance and support throughout the process.

Special appreciation goes to our dedicated team within the Directorate, particularly Mr. Minraj Joshi, Province Nutrition Focal Person; Mr. Bhojraj Joshi, PHI; Mr. Dhirendra Nath, PHO; Mr. Mahesh Pd. Bohora, Stat.O, Mr. Dharmananda Giri, Stat.O for their outstanding leadership, management, and tireless efforts in guiding the survey from planning to execution.

We sincerely thank our technical and implementing partners: Mr. Ranjan Kapali, Program Manager, ACF; Mr. Shirish Man Singh, Project Manager, HKI; Mr. Ashish Timalsina, Nutrition Officer, UNICEF; and Mr. Sajjan Yogesh, Nutrition Officer, UNICEF, for their expert technical inputs, operational guidance, and steadfast commitment.

We acknowledge the exceptional hard work of the survey supervisors, team leaders, and enumerators, who demonstrated remarkable dedication in collecting high-quality data under challenging conditions. Our thanks also go to local leaders and community influencers for their crucial support in mobilization.

Finally, and most importantly, we express profound gratitude to the community members—especially mothers, caretakers, and families—who generously participated.

These findings will inform evidence-based policies and programs to improve the well-being of our communities. Thank you all.

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Dr. Khagendra Bahadur Bam
Director
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Rajpur, Doti
Sudurpashchim Province, Nepal

" स्वच्छ, सबल, भेदभाव रहित समाज, गुणस्तरीय स्वास्थ्य सेवा सुदुरपश्चिम प्रदेशको आवाज "

Acronyms

BoF	Bottle Feeding
CBF	Continued Breastfeeding
CI	Confidence Interval
CMR	Crude Mortality Rate
COVID-19	Corona Virus Disease – 2019
EBF	Exclusive Breastfeeding
EBF2D	Exclusive Breastfeeding for the First Two Days After Birth
EFF	Egg and/or Flesh Foods Consumption
EIBF	Early Initiation of Breastfeeding
ENA	Essential Nutrition Assessment
EvBF	Ever Breastfed
GAM	Global Acute Malnutrition
HAZ	Height for Age Z score
HDDS	Household Dietary Diversity Score
HH	Household
HMIS	Health Information Management System
ISSSF	Introduction of Solid, Semi-Solid, or Soft Foods
IYCF	Infant and Young Child Feeding
MAD	Minimum Acceptable Diet
MAM	Moderate Acute Malnutrition
MDD	Minimum Dietary Diversity
MixMF	Mixed Milk Feeding
MMF	Minimum Meal Frequency
MMFF	Minimum Milk Feeding Frequency for Non-Breastfed Children
MNP	Multiple Micro-nutrient Powder
MUAC	Mid Upper Arm Circumference
NDHS	Nepal Demographic Health Survey
NHRC	Nepal Health Research Council
PPS	Probability Proportional to Size sampling
SAM	Severe Acute Malnutrition
SMART+	Standardized Monitoring and Assessment of Relief and Transition
SwB	Sweet Beverage Consumption
U5MR	Under Five Mortality Rate
UFC	Unhealthy Food Consumption
WAZ	Weight for Age Z score
WHO	World Health Organization
WHZ	Weight for Height Z score
ZVF	Zero Vegetable or Fruit Consumption

Executive Summary

The SMART+ Survey, conducted in May 2025, represents the first province-led nutritional assessment in Sudurpashchim Province, Nepal. Organized by the Health Directorate under the Ministry of Social Development, with technical support from Action Against Hunger, Helen Keller International, and UNICEF, the survey applied standardized SMART methodology to evaluate the nutritional status of children aged 6–59 months across all nine districts. Using a two-stage cluster sampling design, the survey covered 267 clusters and assessed approximately 1,700 children from 4266 households for anthropometric indicators, while also collecting household-level data on infant and young child feeding (IYCF), micronutrient supplementation, full immunization coverage and food security.

The findings indicate a 'very high' prevalence of acute malnutrition, signifying a public health emergency in the province. . Global acute malnutrition was 14.9% by WHZ (WHZ < −2 and/or oedema) and 15.8% using the combined case definition (WHZ < −2 and/or MUAC <125 mm and/or oedema) , a level classified as "very high" by WHO standards and three times higher than the NDHS 2022 provincial estimate of 5.1%. Stunting prevalence is 25.3%, reflecting medium public health significance, while underweight prevalence is 25.5%, underscoring persistent nutritional challenges. Breastfeeding practices remain relatively intact, with high rates of early initiation and continuation. However, complementary feeding indicators show major gaps, particularly after six months, with low dietary diversity, inadequate meal frequency, and poor overall diet quality. Micronutrient supplementation coverage is also suboptimal, leaving children vulnerable to deficiencies.

These localized results highlight the limitations of national-level data in capturing provincial disparities and emphasize the urgent need for targeted, evidence-based interventions. The successful execution of this high-quality survey demonstrates strong provincial capacity and sets a benchmark for future assessments. These findings necessitate an immediate scale-up of nutrition-specific and nutrition-sensitive actions, including early identification, treatment and prevention of acute malnutrition, improved complementary feeding practices, strengthened micronutrient supplementation, and efforts to address underlying determinants such as food insecurity. Acting on these priorities will be critical to ensuring better health and development outcomes for children in Sudurpashchim Province.

1. Introduction

1.1 Organization

©Health Directorate Sudurpashchim Province

The survey was conducted by the Ministry of Social Development through the Provincial Health Directorate in Sudurpashchim Province, located in Rajpur, Nepal (29.244991", 80.94126"). The Health Directorate, Sudurpashchim Province is the principal authority responsible for implementing and coordinating health and nutrition programs across the province. Its primary role includes monitoring and supervising health and nutrition initiatives carried out by local-level governments, in alignment with federal health policies and guidelines.

1.2 Background

Sudurpashchim is one of the provinces under the federal government of Nepal, located in the far western part of the country. It encompasses diverse terrains; mountain, hill, and terai (plains) and shares borders with China to the north and India to the south and west. The province comprises 577,102 households, with approximately 230,000 children under the age of five. Demographically, Sudurpashchim is a young province, with about 60% of its population between the ages of 15 and 40[1].

The nutritional status of children in the province is sub-optimal. According to the Nepal Demographic and Health Survey (NDHS) 2022, 11.8% of households are

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[1] The National Population and Housing Census, 2078 (2021)

moderately food insecure in Sudurpashchim province. Among children under five, 29% are stunted, 5% are wasted, and 14% are underweight.[2]

Women, as the primary caretakers of children in Sudurpashchim, face significant socio-economic and health challenges. Only 6.4% of households have land or property registered in the name of a woman. The maternal mortality ratio in the province is at 130 per 100,000 live births, which is slightly below the national average.[3]

Sudurpashchim is also home to a small number of households (approximately 15–20) from the nomadic ethnic group known as the Raute. While historically nomadic, these communities have recently begun settling in permanent homes in the Dadeldhura district.[4]

Climatically, the province exhibits significant diversity due to its varied topography, ranging from lowland plains to high Himalayan regions.[5] It experiences a wide range of climates—from subtropical to alpine and hosts rich biodiversity. Rainfall plays a critical role in food security, and in recent years, the timing of rainfall has become increasingly erratic and less predictable in Sudurpashchim. This change has likely had adverse effects on crop yields and food production.[6] Sudurpashchim Province has a total of about 370,000 hectares of cultivable land. This land is spread across three main regions: the Terai, the hills, and the mountains. The Terai region has around 92,000 hectares, making up about 25% of the total. The hills have the largest share with roughly 150,000 hectares, or about 41%. The mountains account for around 128,000 hectares, which is about 35% of the province's cultivable land.[7]

1.3   Survey Justification

Although some studies at the district and municipal levels have been carried out in Sudurpashchim Province, their findings on child nutrition and household food security remain fragmented and lack comprehensive coverage[8] [9]. This survey is

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[2] Nepal Demographic Health Survey, 2022
[3] The National Population and Housing Census, 2078 (2021); Nepal Maternal Mortality Study
[4] National Human Rights Commission of Nepal (NHRC) Report, 2024
[5] Nepal Structural Diary: Details of Sudurpashchim Province
[6] World Bank - Nepal, Poverty and Equity Global Practice: Climate risks, exposure, vulnerability and resilience in Nepal
[7] National Sample Census of Agriculture, Nepal, 2021/22
[8] SMART Nutrition Survey, Bajura District, Nepal, September 2022
[9] Factors influencing minimum acceptable diet (MAD) intake among children aged 6–23 months in remote mid-Himalayan region of Sudurpaschim, Nepal

designed to fill that gap by providing an in-depth and province-wide assessment of both child nutritional status and household food security.

The results of this study provide critical evidence to guide policymakers and program managers in prioritizing interventions and reallocating available health and nutrition resources. By enabling more targeted, efficient, and evidence-based strategies, the findings help to contribute in reducing malnutrition and improving overall public health outcomes in Sudurpashchim Province.

1.4   Survey Type

The survey type used in this survey is a Full SMART+ (Standardized Monitoring and Assessment of Relief and Transitions) survey. SMART+ is an innovative digital extension of the traditional SMART Methodology, transforming manual nutrition survey processes into a streamlined, all-in-one platform. It enables real-time data collection, analysis, monitoring, and sharing through tools like a mobile app, centralized platform, global data aggregator, and interactive dashboard to improve timeliness, accuracy, and decision-making in humanitarian crises and development programs.

1.5   Survey Timing

Data collection was conducted from May 2025 during the lean season in Sudurpashchim Province.

1.6   Type of Population

The target population for this survey is all the population of Sudurpashchim Province specifically children under 5 years of age

1.7   Type of Setting

The survey was conducted across both rural and urban areas reaching the household level.

1.8   Survey Location

The survey took place in throughout Sudurpashchim Province, ensuring comprehensive coverage of all nine districts and 88 local level governments in the province, from the terai plains to the hilly and mountainous regions.

1.9   Excluded Areas

No geographic areas had been excluded from the survey coverage. All districts and clusters within Sudurpashchim Province are included in the sampling frame.

2. Survey Goal and Objectives

2.1 Survey Goal

The overall goal of this SMART+ survey is to assess the nutritional status of children under five years of age in Sudurpashchim Province. The survey aims to generate evidence that will inform provincial health and nutrition planning, guide targeted interventions, and improve nutrition and food security outcomes for young children.

2.2 Specific Survey Objectives

- To assess the nutritional status of children under five years of age in Sudurpashchim Province, with a focus on key indicators such as wasting, stunting, and underweight.
- To identify Infant and young child feeding (IYCF) practices in the province.
- To measure the household dietary diversity (HDDS) in Sudurpashchim Province.
- To assess the coverage of multiple Micronutrient Powder (MNP) supplementation among children aged 6–23 months.
- To verify full immunization coverage status among children aged 16–59 months.

2.3 Indicators Included

Indicator	Target Population
Household Indicators	
Food Security	
Household Dietary Diversity Score (HDDS)	Total Population
Child Indicators	
Anthropometry	6-59 months
IYCF (EvBF, EIBF, EBF2D, EBF, MixMF, CBF, ISSSF, MDD, MMF, MMFF, MAD, EFF, SwB, UFC, ZVF, BoF)	0-23 months
MNPs supplementation coverage	6-23 months
Full Immunization coverage	16-59 months

3. Methodology

3.1 Survey Design

3.1.1 Sampling Method

The survey employed a two-stage cluster sampling method. First, the total number of required households was calculated based on the survey objectives. From this, the needed number of children was determined. The number of clusters was then finalized, taking into account the daily workload and time required for each team to complete data collection in one cluster i.e., 16 households per cluster **(details in table 1)**.

In the first stage, clusters—defined as the smallest administrative units (wards)—were randomly selected using probability proportional to size (PPS) sampling. This approach ensured that wards with larger populations had a higher probability of being selected with multiple clusters in a single ward, making the sample representative of the province's population distribution.

3.1.2 Second Stage Sampling Method

In the second stage, households within each selected cluster were chosen using systematic random sampling to ensure representativeness and reliability of the household-level data.

For clusters with a large number of households, segmentation was first applied to divide the cluster into smaller segments ranging 50 to 100 households in hills and mountains whereas 200 to 300 households in terai. A random number was then used to select one segment, and systematic random sampling was subsequently performed within that selected segment to identify the required households.

3.1.3 Household Definition

For the purposes of this survey, a household is defined as a group of individuals who usually live together in the same dwelling, sleep in the same place, and share meals prepared from a common kitchen or cooking pot.

3.2 Sample Size

3.2.1 Correction for small population size

A correction for small population size was not applied, as the cumulative population of the survey area exceeds 10,000. This correction is generally only required when the total population of interest is 10,000 or fewer, to maintain statistical validity.

3.2.2 Age Group

The target age group for this survey includes children aged 6-59 months.
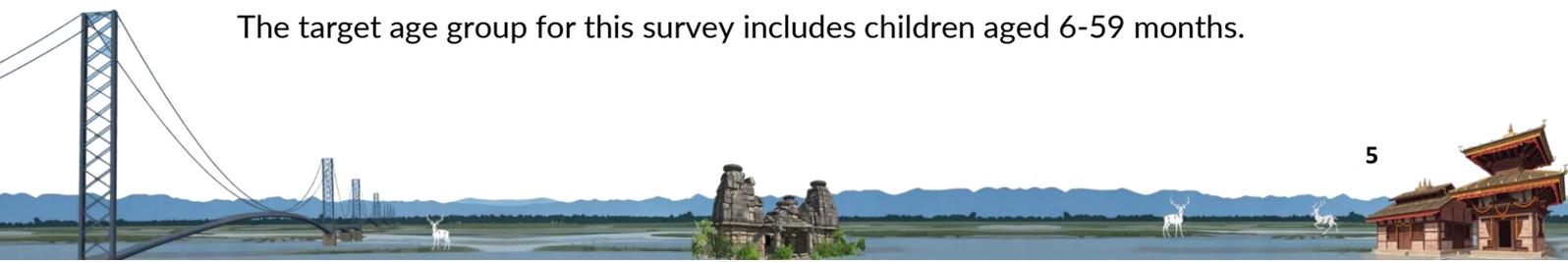
3.2.3   Parameters

The sample size was calculated based on the following assumptions and contextual indicators relevant to the study area. The resulting number of children was then used to determine the total number of households to be surveyed, accounting for estimated child prevalence and average household size.

The sample size for the survey was determined during the planning stage with the help of the SMART+ platform, focusing on anthropometry. The key assumptions included an estimated rate of acute malnutrition in children, which was set higher than recent national survey figures for Sudurpashchim province, because those seemed unusually low when compared to routine health system data—an adjustment made based on expert judgment. Standard values were used for the level of precision and the design effect.

This calculation gave the number of children needed in each district, and therefore across the whole province. To figure the numbers of households to visit, other factors were added: the average number of people per household and the percentage of children aged 6-59 months in households (estimated target population, HMIS 2081/82), plus a non-response for households that might not participate. In the end, this provided the total number of households required for the entire province i.e. 4266 households and 1566 children.

Table 1. Sampling parameters

Parameters for Anthropometry	Value	Assumptions/Justifications based on context (footnote any references used)
Estimated Prevalence of GAM (%)	7.50	NDHS 2022 showed a GAM (wasting) prevalence of 5.1%, which seems way too low contrasting the HMIS data, hence the assumption that the prevalence is higher, has been estimated for the entire province based on expert opinion.
± Desired precision	5.00	A default value of 5% is set, as commonly practiced in health science-related surveys.
Design Effect (if applicable)	1.50	A default value is used, based on standard practice in national-level surveys in Nepal.
Children to be included in the province	**1566**	
Average HH Size	4.67	As per the recent census conducted in Nepal in 2021
% Children under-5	8.80	As per the recent census conducted in Nepal in 2021
% Non-response Households	3.00	Based on response rates from previous surveys conducted in Bajura District, Sudurpashchim Province.
Households to be included in the province	**4266**	

3.3   Cluster Selection

3.3.1   Calculation of Household Coverage

Table 2. Household planning

Parameter	Value (minutes)
Total time per day for field work	600
Travel time to cluster location	45
Duration for initial introduction and selection of household	20
Total duration of breaks	30
Travel time from one household to another	10
Average time in the household	20
Number of HH planned/day/team	**16**

This figure of 16 HH/day/team helped to plan the number of teams, clusters and days for the survey i.e., 41 teams collecting data from 267 clusters in 11 days.

3.3.2   Cluster Calculation

A total of 267 clusters was included in the survey. These clusters have been determined based on the calculated sample size, the number of households to be surveyed, and the sampling design, ensuring adequate representation across all districts within Sudurpashchim Province. In addition, 29 reserve clusters were also identified in case the number of children were not met.

4.   Case Definitions and Thresholds

a) **Age (in completed months):** Age was recorded in day/month/year format, based on official documents such as a birth certificate, immunization card, or health card, if available. If no documentation was present, age was estimated in completed months using a local calendar of events (see Annex 3) in consultation with the caretaker.

b) **Weight (in kg):** Children were weighed without clothing to the nearest 100 grams (0.1 kg) using a 2 in 1 digital weighing scale. If a child was weighed with minimal clothes on, 200 grams were subtracted from the recorded weight to account for clothing. This deduction was based on the mean weight of clothing obtained by sampling and weighing the garments of 10% of children during the field test. For children who could stand unassisted, their weight was measured while standing on the scale. For infants or children who were unable to stand, the double weighing method was used,

where the caretaker was first weighed alone and then while holding the child; the child's weight was calculated as the difference.

c) **Height/Length (in cm):** Height and length was measured using a standardized **Height Board** to a precision of 0.1 cm.

- Children **under 2 years of age** were measured lying down (recumbent length).
- Children **aged 2 years and above** were measured standing (height).
- The team of the enumerators, in coordination with the caretaker conducted measurements and ensured accuracy and consistency.

d) **Mid-Upper Arm Circumference (MUAC):** MUAC was measured on the left arm, at the midpoint between the acromion (shoulder) and olecranon (elbow) processes, using a flexible, non-elastic standard MUAC tape. The child's left arm was relaxed and hanging freely at the side during MUAC measurement. MUAC was recorded to the nearest millimeter (mm).

e) **Bilateral Pitting Oedema:** Oedema was assessed by applying gentle pressure with the thumbs on the tops of both feet for three seconds. The presence of bilateral pitting oedema was confirmed if a shallow depression remained after the pressure was released. Only bilateral oedema (both feet affected) qualified as positive for nutritional oedema.

f) **Cut-offs for malnutrition status:** The cut-offs used for this survey are as below:

Table 3. Classification of Acute Malnutrition by Z-Score (age 6–59 Months)

Indicator	Z-Score	Classification	Type of Malnutrition
Weight-for-Height (WHZ)	≥ -2	Normal	-
	< -2 and ≥ -3	Moderate Acute Malnutrition (MAM)	Wasting (Acute)
	< -3	Severe Acute Malnutrition (SAM)	Wasting (Acute)
Height-for-Age (HAZ)	≥ -2	Normal	-
	< -2 and ≥ -3	Moderate Stunting	Stunting (Chronic)
	< -3	Severe Stunting	Stunting (Chronic)
Weight-for-Age (WAZ)	≥ -2	Normal	—
	< -2 and ≥ -3	Moderate Underweight	Underweight (Mixed)
	< -3	Severe Underweight	Underweight (Mixed)
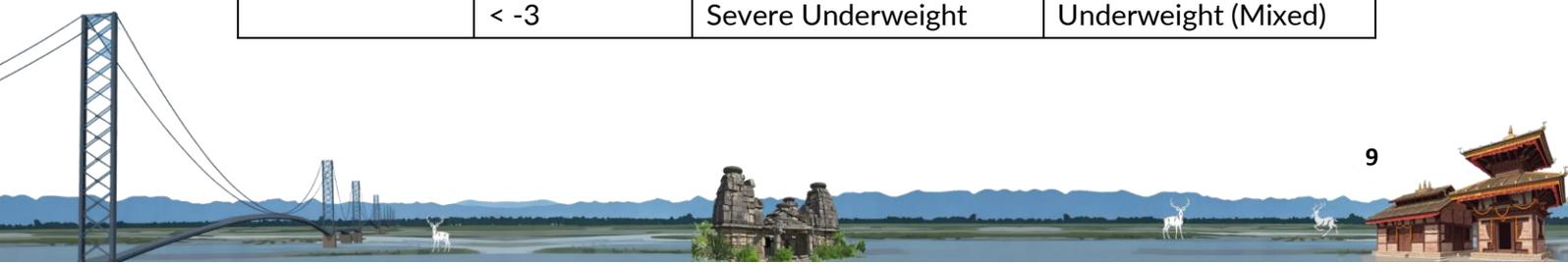
Table 4. Classification of Acute Malnutrition by MUAC measurement

MUAC measurement	Status
Less than 115 mm (< 115 mm)	Severe Acute Malnutrition
115 mm and above and less than 125 mm (≥ 115 mm and <125 mm)	Moderate Acute Malnutrition
125 mm and above (≥ 125 mm)	Normal

Table 5. Classification of nutritional oedema

Grade	Definition	Bilateral oedema found in
Absent	No bilateral pitting oedema	
+	Mild nutritional oedema	Feet
++	Moderate nutritional oedema	Feet, below the knee lower legs, hands or lower arms
+++	Severe nutritional oedema	General; including feet, hands and face

Table 6. WHO/UNICEF Classification for severity of malnutrition by prevalence

Indicators	Prevalence Thresholds Level (%)				
	Very High	High	Medium	Low	Very Low
Wasting (WHZ)	≥ 15	10 - 15	5 - < 10	2.5 - < 5	< 2.5
Overweight (WHZ)	≥ 15	10 - 15	5 - < 10	2.5 - < 5	< 2.5
Stunting (HAZ)	≥ 30	20 - > 30	10 - < 20	2.5 - < 10	< 2.5
	Critical		Serious	Poor	Acceptable
Underweight (WAZ)	≥ 30		20 - > 30	10 - < 20	< 10

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5. Organization of the Survey

5.1   Coordination/Collaboration:

The survey was led and conducted by the Health Directorate of Sudurpashchim Province. The Directorate was responsible for overall coordination with the districts and local levels. To facilitate local coordination and smooth implementation, one supervisor from the nutrition program in each district was trained and designated to support communication, logistics, and operational collaboration at the district and local level.

5.2   Logistics

The following equipment and tools were used during the survey, in accordance with national and international standards:

- **Stadiometer (height board):** A calibrated wooden height/length measurement device certified by both international and Nepal Government standards were used.
- **2 in 1 digital weighing Scale:** A portable, digital, and calibrated 2 in 1 SECA weighing scale was used for accurate weight measurements of children.
- **MUAC Tape:** A non-elastic, color-coded, calibrated, and standard MUAC tape was used for measuring mid upper arm circumference of children aged 6-59 months. Each survey team was provided with one MUAC tape per day for measuring Mid-Upper Arm Circumference.

5.3   Training, Supervision, and Team Composition

5.3.1   Recruitment of Survey Teams

Government health workers (Public Health Inspectors (PHI), Health Assistants (HA), Senior / Auxiliary Health Workers (Sr. / AHW), or Senior / Auxiliary Nurse Midwives (Sr. / ANM)) from health facilities across all nine districts of Sudurpashchim Province were chosen for the survey teams based on the following selection criteria:

- Comfortable using digital apps and filling online forms and own a Android smartphone.
- Interested in surveys and showing a positive attitude toward the work.
- Physically fit and able to carry equipment like height boards and weighing scales.
- Trained on comprehensive nutrition specific interventions training package and working in an outpatient therapeutic care center.

The list of survey teams is provided in Annex 3.
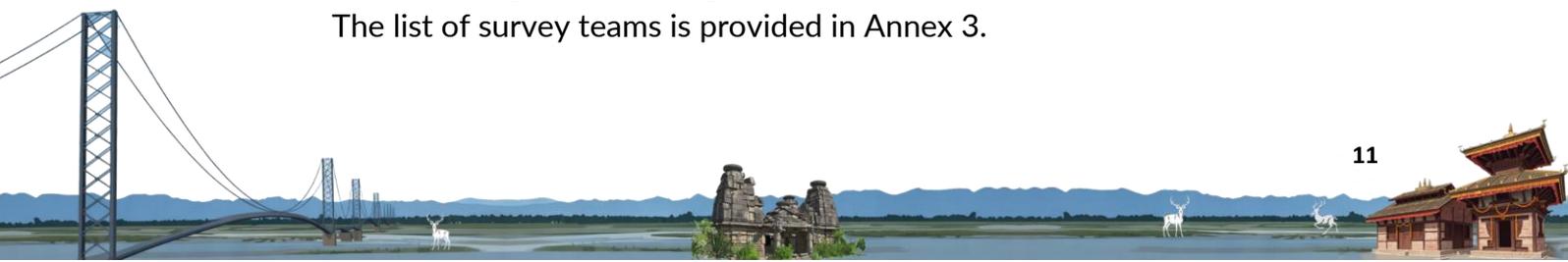
5.3.2 Number of Teams

A total of 41 teams were deployed to conduct data collection during the survey period.

5.3.3 Training of Survey Teams

- A two-day training session was conducted for the supervisors regarding the SMART methodology to equip them with the knowledge and skills necessary to effectively oversee survey in Sudurpashchim Province. Two supervisors were assigned for the survey where the lead supervisor was nutrition focal person from each health offices from all nine districts.
- Four batches of three-day training sessions were conducted prior to data collection. The training included instructions on:
  - ✓ Cluster segmentation and household selection,
  - ✓ Anthropometric measurement techniques,
  - ✓ Enumerator roles and responsibilities,
  - ✓ Survey procedures and field logistics,
  - ✓ Use of the data collection platform (SMART Collect),
  - ✓ Ensuring data quality and survey plausibility

5.3.4 Standardization test

To ensure the accuracy and reliability of anthropometric data (weight, height/length, and MUAC measurements) collected during the SMART+ Survey, a standardization test was conducted as a mandatory part of the enumerator training. All 82 enumerators underwent the rigorous standardization test.

The test was organized and facilitated by experienced trainers. It took place over one full day during the three-day training session for enumerators and measurers. The purpose of the standardization test was to assess and minimize measurement errors and biases among the survey team members. Accurate anthropometric measurements are critical in nutrition surveys, as even small errors can significantly affect the estimated prevalence of malnutrition.

The process followed standard SMART methodology:

- 10 healthy children (aged 6–59 months), who were not part of the actual survey sample, were selected from nearby early childhood development (ECD).
- Each child was measured twice by each enumerator/measurer for weight, height/length, and MUAC, following the exact protocols that would be used in the field.

- A highly experienced trainer (designated as the "gold standard" measurer) also measured each child twice using the same calibrated equipment.
- The enumerators' measurements were then compared to the trainer's results to calculate precision (consistency of repeated measurements by the same person) and accuracy (how close the measurements were to the gold standard).
- Results were analyzed on the spot using standard statistical indicators (e.g., mean bias, standard deviation of differences, and percentage of measurements within acceptable limits).
- Enumerators who did not meet the required accuracy and precision thresholds received additional one-on-one coaching and were re-tested until they achieved acceptable performance.

Only those who passed the standardization test were assigned to field teams as measurers. This rigorous process helped ensure high-quality, reliable data throughout the survey across all nine districts of Sudurpashchim Province.

5.4 Details of Field Supervision

The survey was implemented across all nine districts of Sudurpashchim Province. In each district, a roving supervisor oversaw field operations and guided the assigned teams. Supervisors supported in assisting teams with field logistics and movements, monitored enumerators' adherence to sampling procedures, and provided random numbers from the PPS table to control segment selection after segmentation.

5.5 Data Entry Procedures

Data was collected electronically in real-time using SMART Collect by the enumerators in android devices. Each day after the data collection, the data was checked for inconsistence and verified by the supervisors and sent to the technical lead team for daily quality checks. During the data collection, every evening from 6-9 pm the survey team would meet virtually for data quality assurance, daily field updates, and feedback collection.

5.6 Translation/Backtranslation

The questionnaire developed using the SMART+ system was translated into Nepali by the technical team. A back-translation to English was performed to ensure accuracy and consistency.

5.7 Field Test

After the training, each team conducted a field test in a non-selected cluster. Teams practiced cluster segmentation, household sampling, and data collection using SMART Collect, by surveying at least five households with eligible children.

5.8 Special Cases

a) **No children in the household:** If no eligible children were present, the household was still interviewed for all applicable questions related to other survey components. The household was not replaced.
b) **Abandoned Household:** The household was considered abandoned if no one lived there the from last 6 months and there are no plans for return. Abandoned households were removed from the sampling frame before household listing and selection.
c) **Absent Household:** A household was considered absent if it was recently inhabited but no one was present on the day of the visit. Enumerators made at least two revisits to confirm absence. If the household was still absent, the team skipped to the next household as per the sampling plan.
d) **Excluded Household**: The household was excluded where there was no eligible child or household member met exclusion criteria.

e) **Absent children:** If an eligible child was absent, enumerators collected the household data and the caretakers were informed that the enumerators would return later that day. And, multiple attempts were made to locate the child before leaving the area.

f) **Children with disability/handicap:** If a child's physical disability prevented from measuring, the measurement were recorded as missing. All other applicable data were collected. A note was made in the cluster control form.

g) **Polygamous Families:** For polygamous families, the standard household definition was followed when selecting households, regardless of whether families live together or separately.

h) **Compounds:** The same sampling procedures were applied as elsewhere. The household definition was applied to select households within a compound.

i) **Not possible to visit Household:** If a household was inaccessible Enumerators proceeded to the next pre-selected household.

j) **Child in Center/Institution:** If a selected child resides in a center or institution the child was assigned an ID number and attempted another visit in the institution. If the visit was not feasible, all possible information were clearly recorded and clearly noted for the reason.

5.9   Referral

The survey adhered to National Integrated Management of Acute Malnutrition guidelines for the identification and referral of children with Severe Acute Malnutrition (SAM). Children were referred to the nearest health facility if they met any of the following criteria of severe acute malnutrition.

- Presence of nutritional oedema, or
- MUAC < 115 mm and/or Z-score <-3 S.D.

Enumerators informed caretakers and provided directions or referral slips, to all identified SAM cases, to ensure timely medical attention. MAM children were referred to the nearest health facility for counselling and other social safety net services available at the local level.

5.10   Ethical Considerations

The following ethical principles guided the implementation of the survey:

- **Ethical Approval:** Ethical approval for the survey was obtained from the Nepal Health Research Council (NHRC) with reference number 858.
- **Voluntary Participation:** Participation in the survey was entirely voluntary. Respondents were informed of the purpose of the survey and their rights before any data was collected.
- **Informed Consent:** Verbal informed consent was obtained from each respondent before initiating the interview or conducting any measurements.
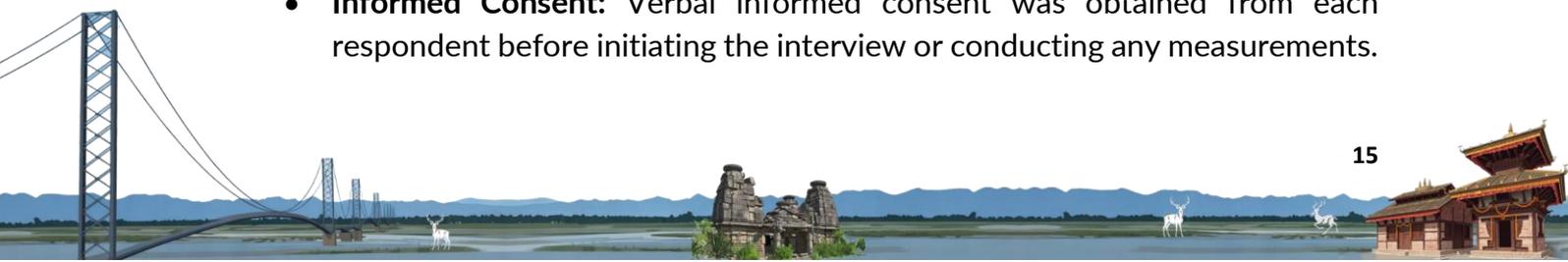
Participants were given the right to decline or skip any questions they were uncomfortable answering without penalty.

- **Confidentiality and Data Privacy:** All personal identifiers were anonymized during data storage and analysis to ensure the confidentiality and privacy of respondents. Data is stored securely and accessed only by authorized personnel.
- **Protection of Vulnerable Populations:** The parents or guardians of children identified as acutely malnourished during the survey, were immediately informed and advised to seek care at the nearest nutrition or health service facilities.

5.11 Electronic Data Collection, Data Management, and Data Analysis

a) Mobile data collection tools
Data was collected using the Smart Collect mobile application. This platform enabled real-time, offline-capable digital data collection, which helped reduce errors associated with manual entry and ensured efficient data transmission once connected to the internet.

b) Digital infrastructure used
Android smartphones with pre-installed Smart Collect software was used by all enumerators. Data was stored securely on local devices during fieldwork and uploaded to a central server at the end of each day, where it was backed up and reviewed by Managers and Supervisors.

c) Data quality control
To ensure quality data collection, several measures were implemented:
- Standardization tests were conducted during enumerator training to ensure consistency in anthropometric measurements and interview techniques.
- Daily plausibility checks were be carried out by Managers and Supervisors using built-in SMART plausibility reports.
- Any outliers were flagged for follow-up and correction by field teams with supervisors before final data submission.

d) Data analysis and tools
The collected data was exported from Smart Collect and analyzed using ENA for SMART and MS-Excel.
- Nutritional data was collected for all 6-59 months children in each surveyed household to provide an accurate provincial-level prevalence estimate.
- Socio demographic and maternal information was presented descriptively.

5.12 Limitations

Key limitations include potential recall and social desirability bias in caregiver-reported indicators, and limited seasonal generalizability because data were collected during the lean season:

- **Social desirability bias**: Respondents may overreport healthy practices, particularly regarding frequency and diversity of food intake.
- **Recall bias**: Inaccuracies may arise in self-reported data related to child feeding practices, especially for past events.
- **Seasonal limitation**: Data collection during a single season may not capture seasonal variation in dietary diversity and feeding practices, limiting the generalizability of findings across the year.
- **Proxy indicator for food security**: Household food security will be assessed using Household Dietary Diversity (HDD), which may not fully capture the multi-dimensional aspects of food security.
- The two-stage cluster sampling used wards as primary units with probability proportional to size (PPS) for provincial representativeness, but the resulting cluster distribution may not be perfectly proportional across the nine districts. This could lead to uneven sample sizes per district, wider confidence intervals, and reduced precision for district-specific estimates. While provincial-level results remain valid, district-disaggregated findings should be interpreted with caution.

5.13 Health and Safety Measures During Fieldwork

To ensure the safety of enumerators, supervisors, and respondents, the following health and safety protocols were enforced during the survey:

- Regular use of hand sanitizer before and after each household interview and measurement.
- Symptom screening for field staff before deployment and monitoring throughout the data collection period was done.

Additional health measures were adapted based on provincial public health advisories at the time of the survey.

6. Results

6.1 Demographic Characteristics

The study population was predominantly Brahmin/ Chhetri, accounting for 58.3%. Janajaati communities represented 22.4%, while Dalit participants comprised 16.2% of the sample. Smaller proportions were from Giri/ Puri/ Dasnami/ Sanyasi (2.8%), Muslim (0.2%) and Madhesi (0.1%). (Figure 1)
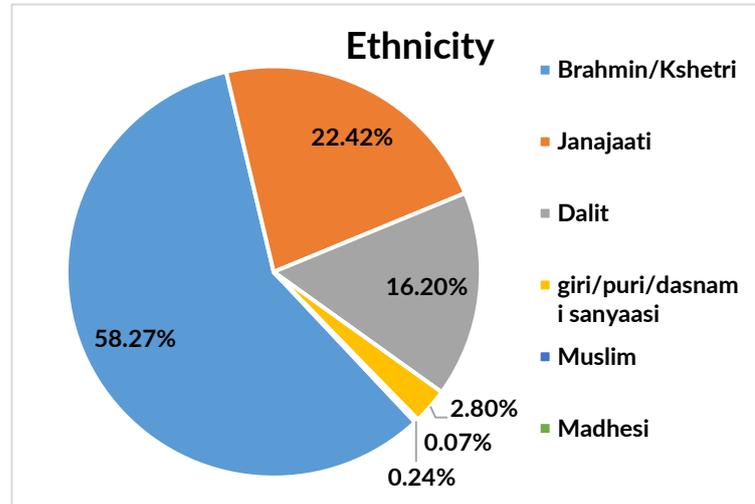
Figure 1. Ethnicity of the respondents

The figure 2 shows the distribution of households by family type. The majority of households (62%) were nuclear families, indicating that most children lived in households consisting of parents and their children only. Joint families accounted for 35% of households. Only a small fraction (3%) of households were classified as extended families. Overall, the findings suggest that nuclear family structures predominate in the study area, with joint families also remaining common.
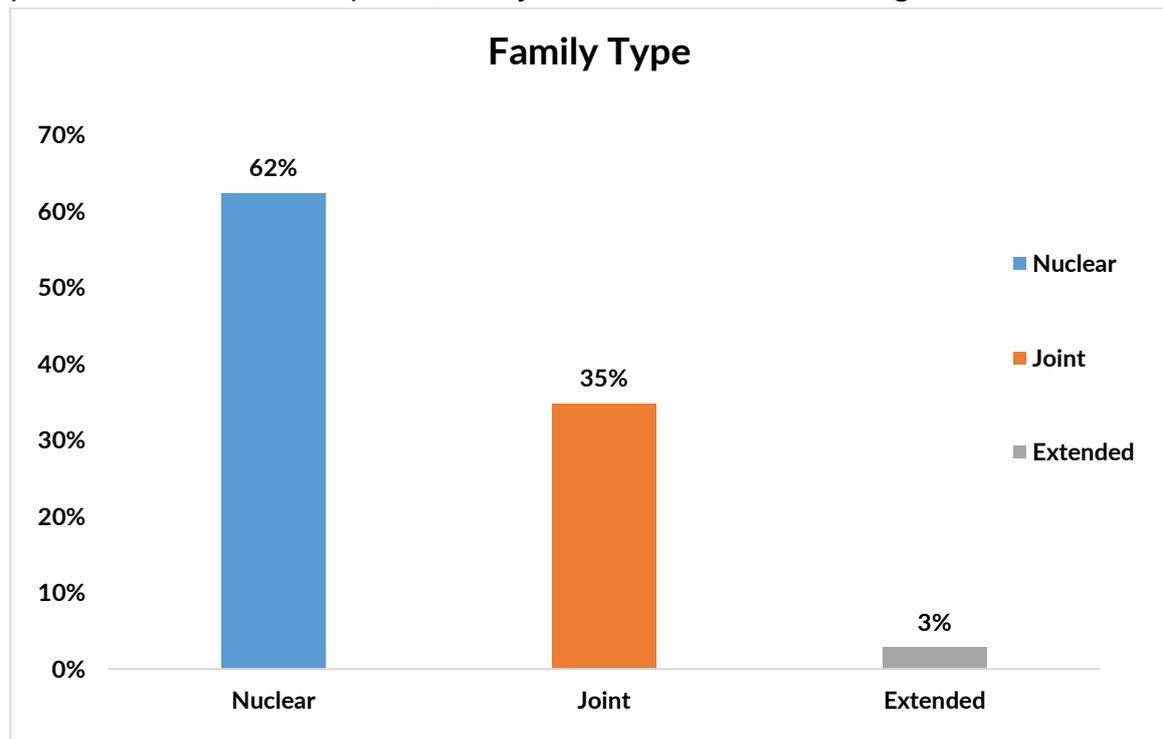
Figure 2. Distribution of households by family type

Among the mothers interviewed, 87% were literate and 13% were illiterate. Among literate mothers, the average years of schooling was 10 years. (Figure 3)

Mother's education

13% 87%

Average schooling years

10 years

■ Illiterate ■ Literate
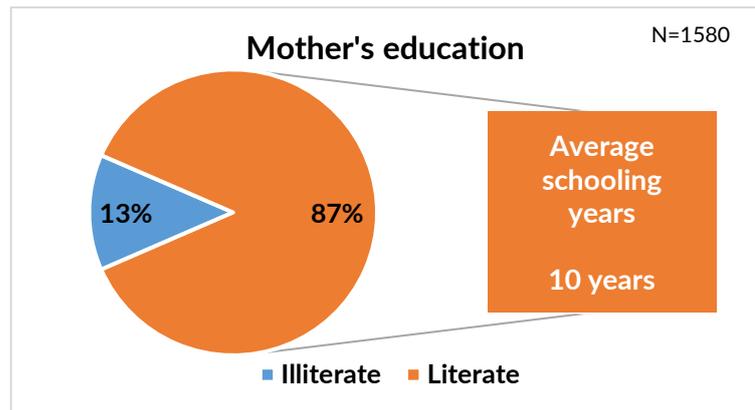
Figure 3. Mother's education

The majority of mothers (65.1%) reported their primary occupation as homemaker, followed by agriculture (26.1%). Smaller proportions were engaged in business (3.7%), service (4.9%), and other occupations (daily wage workers & self-employed) (0.3%) (Figure 4).

Mother's occupation

N=1580

■ Agriculture
■ Busness
■ Homemaker
■ Service
■ Others

80.0%

60.0%

40.0%

20.0%

0.0%

26.1%   3.7%   65.1%   4.9%   0.3%

Agriculture   Busness   Homemaker   Service   Others
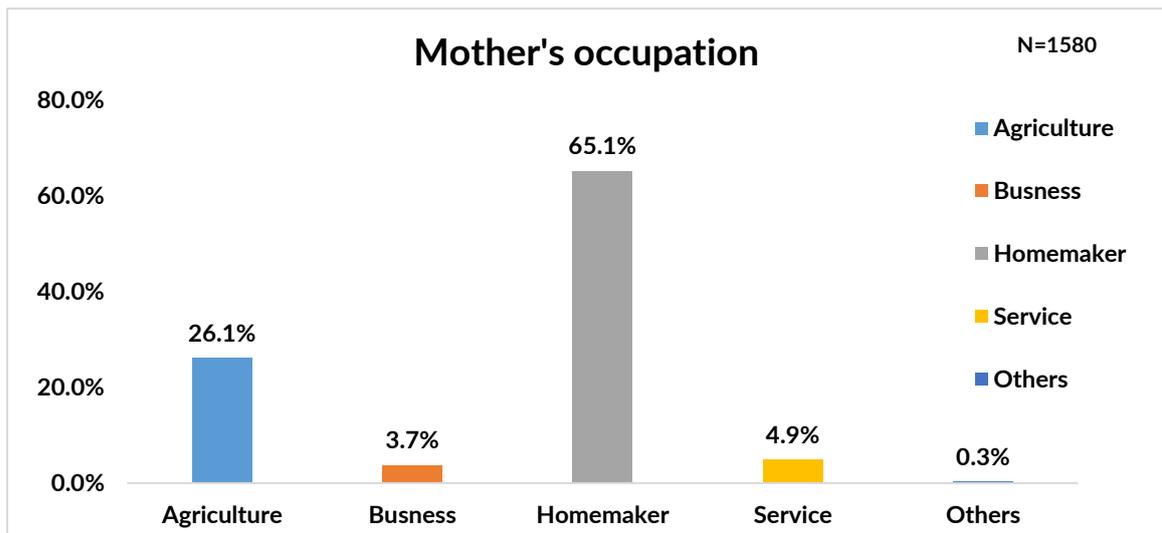
Figure 4. Mother's occupation

The most common sources of drinking water were spring water (40.5%), tube wells (37.6%), and tap water (20.5%). Smaller proportions relied on river water (0.8%), wells (0.3%), rain water (0.3%), and other sources – jar water (0.28%) (Figure 5).

Source of water

0.28%

40.51%   37.56%

0.33%

0.80%   20.51%

■ Tube well
■ Tap water
■ Well
■ Rain water
■ River water
■ Spring water
■ Others
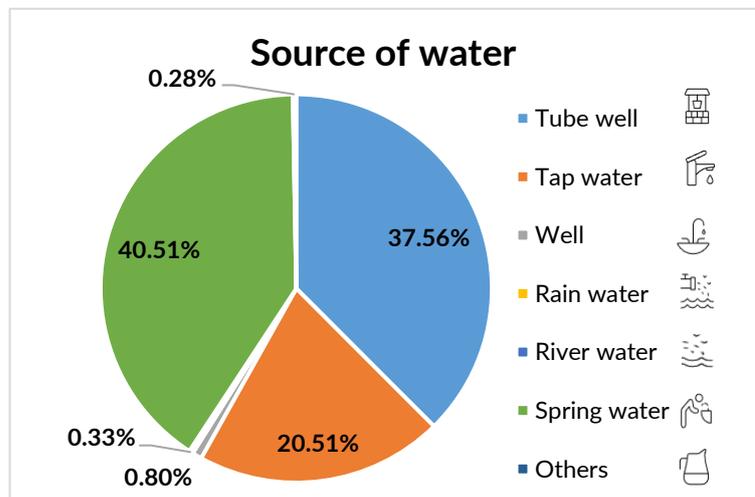
Figure 5. Source of water at household

Among the households surveyed, 97% reported having access to latrine, indicating near-universal coverage. Only 3% of households lacked latrine. (Figure 6)
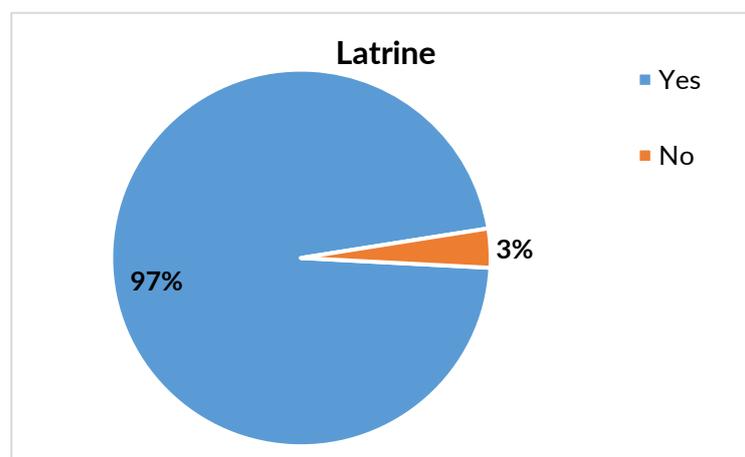
Figure 6. Access to latrine

6.2 Anthropometric results

The SMART plus survey assessed the nutritional status of children using anthropometric indicators: Height-for-Age Z-score (HAZ), Mid-Upper Arm Circumference (MUAC), Weight-for-Height Z-score (WHZ), and Weight-for-Age Z-score (WAZ). Below is a summary of the prevalence rates:

Overall, the prevalence of global acute malnutrition (GAM: WHZ < -2 or oedema) was 14.9% (95% CI: 13.1–16.8%), affecting 253 of 1,701 children. Rates were similar between boys (14.9%; 139/932) and girls (14.8%; 114/769).

Moderate acute malnutrition (MAM: WHZ -3 to < -2, no oedema) affected 12.9% of children, with comparable rates in boys (12.6%) and girls (13.4%). Severe acute malnutrition (SAM: WHZ < -3 or oedema) was observed in 2.0% of children (34/1,701), slightly higher in boys (2.5%) than in girls (1.5%) **(Table 7).**

Table 7. Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 1701	Boys n = 932	Girls n = 769
Prevalence of global acute malnutrition (<-2 z-score and/or oedema)	(254) 14.9 % (13.1 - 16.8 95% C.I.)	(140) 14.9 % (12.7 - 17.4 95% C.I.)	(114) 14.8 % (12.4 - 17.6 95% C.I.)
Prevalence of moderate acute malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(220) 12.9 % (11.4 - 14.7 95% C.I.)	(117) 12.6 % (10.5 - 14.9 95% C.I.)	(103) 13.4 % (11.2 - 15.9 95% C.I.)
Prevalence of severe acute malnutrition (<-3 z-score and/or oedema)	(34) 2.0 % (1.3 - 2.8 95% C.I.)	(23) 2.5 % (1.5 - 3.7 95% C.I.)	(11) 1.5 % (0.8 - 2.7 95% C.I.)

The prevalence of oedema is 0.0 %

Global acute malnutrition (MUAC <125 mm or oedema) was 3.5%, with a higher rate in girls (4.5%) than boys (2.7%). Moderate acute malnutrition accounted for most cases (3.2%), while severe acute malnutrition was rare (0.3%). No cases of nutritional oedema were observed **(Table 8)**.

Table 8. Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 1727	Boys n = 948	Girls n = 779
Prevalence of global acute malnutrition (< 125 mm and/or oedema)	(61) 3.5 % (2.8 - 4.5 95% C.I.)	(26) 2.7 % (1.9 - 3.9 95% C.I.)	(35) 4.5 % (3.3 - 6.2 95% C.I.)
Prevalence of moderate acute malnutrition (< 125 mm and >= 115 mm, no oedema)	(56) 3.2 % (2.5 - 4.2 95% C.I.)	(23) 2.4 % (1.6 - 3.6 95% C.I.)	(33) 4.2 % (3.0 - 5.9 95% C.I.)
Prevalence of severe acute malnutrition (< 115 mm and/or oedema)	(5) 0.3 % (0.1 - 0.7 95% C.I.)	(3) 0.3 % (0.1 - 1.0 95% C.I.)	(2) 0.3 % (0.1 - 1.0 95% C.I.)

Global acute malnutrition (GAM: WHZ < -2 or MUAC <125 mm or oedema) was 15.8% overall, with similar rates in boys (15.3%) and girls (16.4%). Severe acute malnutrition (SAM: WHZ < -3 or MUAC <115 mm or oedema) was 2.1% overall, slightly higher in boys (2.4%) than girls (1.7%) **(Table 9).**

Table 9. Prevalence of combined GAM and SAM based on WHZ and MUAC cut off's (and/or oedema) and by sex*

	All n = 1727	Boys n = 948	Girls n = 779
Prevalence of combined GAM (WHZ <-2 and/or MUAC < 125 mm and/or oedema)	(273) 15.8 % (14.1 - 17.7 95% C.I.)	(145) 15.3 % (13.1 - 17.7 95% C.I.)	(128) 16.4 % (14.0 - 19.2 95% C.I.)
Prevalence of combined SAM (WHZ < -3 and/or MUAC < 115 mm and/or oedema	(36) 2.1 % (1.5 - 3.0 95% C.I.)	(23) 2.4 % (1.6 - 3.7 95% C.I.)	(13) 1.7 % (0.9 - 2.9 95% C.I.)

*With SMART or WHO flags a missing MUAC/WHZ or not plausible WHZ value is considered as normal when the other value is available

Overall, 25.5% of children were underweight (WAZ<-2), with a slightly higher prevalence in girls (26.9%) than boys (24.3%), with overlapping 95% CIs. Moderate underweight (WAZ-3 to <-2) affected 20.7% of children, while severe underweight (WAZ<-3) was observed in 4.8%, with higher rates in girls (6.4%) compared to boys (3.5%) **(Table 10).**

Table 10. Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 1707	Boys n = 937	Girls n = 770
Prevalence of underweight (<-2 z-score)	(435) 25.5 % (23.2 - 27.9 95% C.I.)	(228) 24.3 % (21.6 - 27.3 95% C.I.)	(207) 26.9 % (23.5 - 30.5 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(353) 20.7 % (18.6 - 22.9 95% C.I.)	(195) 20.8 % (18.2 - 23.7 95% C.I.)	(158) 20.5 % (17.5 - 23.9 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(82) 4.8 % (3.9 - 5.9 95% C.I.)	(33) 3.5 % (2.5 - 4.9 95% C.I.)	(49) 6.4 % (4.9 - 8.3 95% C.I.)

Overall, 25.3% of children were stunted (HAZ<-2), with similar rates in boys (25.9%) and girls (24.5%). Moderate stunting (HAZ -3 to <-2) affected 20.2% of children overall, while severe stunting (HAZ <-3) was observed in 5.1%, with slightly higher prevalence in boys (4.9%) than girls (3.9%) **(Table 11).**

Table 11. Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 1665	Boys n = 915	Girls n = 750
Prevalence of stunting **(<-2 z-score)**	(421) 25.3 % (22.7 - 28.1 95% C.I.)	(237) 25.9 % (22.7 - 29.3 95% C.I.)	(184) 24.5 % (21.2 - 28.2 95% C.I.)
Prevalence of moderate stunting **(<-2 z-score and >=-3 z-score)**	(336) 20.2 % (17.9 - 22.7 95% C.I.)	(192) 21.0 % (18.0 - 24.3 95% C.I.)	(144) 19.2 % (16.3 - 22.5 95% C.I.)
Prevalence of severe stunting **(<-3 z-score)**	(85) 5.1 % (4.1 - 6.3 95% C.I.)	(45) 4.9 % (3.7 - 6.5 95% C.I.)	(40) 5.3 % (3.9 - 7.3 95% C.I.)

Table 12. Disaggregated Prevalence of acute malnutrition according to district.

Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by district																				
Province		WHZ	Achham		Baitadi		Bajhang		Bajura		Dadeldhura		Darchula		Doti		Kailali		Kanchanpur	
N			N		N		N		N		N		N		N		N		N	
1701			148		153		106		93		77		70		141		486		427	
254	14.9%	GAM	20	13.5%	14	9.2%	9	8.5%	11	11.8%	11	14.3%	9	12.9%	21	14.9%	83	17.1%	76	17.80%
220	12.9%	MAM	18	12.2%	13	8.5%	7	6.6%	9	9.7%	10	13.0%	8	11.4%	18	12.8%	70	14.4%	67	15.69%
34	2.0%	SAM	2	1.4%	1	0.7%	2	1.9%	2	2.2%	1	1.3%	1	1.4%	3	2.1%	13	2.7%	9	2.11%

Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by district																				
Province		MUAC	Achham		Baitadi		Bajhang		Bajura		Dadeldhura		Darchula		Doti		Kailali		Kanchanpur	
N			N		N		N		N		N		N		N		N		N	
1727			148		155		108		94		79		71		143		493		436	
61	3.50%	GAM	4	2.70%	2	1.30%	6	5.60%	4	4.30%	2	2.50%	3	4.20%	6	4.20%	22	4.50%	12	2.80%
56	3.20%	MAM	4	2.70%	2	1.30%	6	5.60%	3	3.20%	2	2.50%	3	4.20%	6	4.20%	21	4.30%	9	2.10%
5	0.30%	SAM	0	0%	0	0%	0	0%	1	1.10%	0	0%	0	0%	0	0%	1	0.20%	3	0.70%

Prevalence of combined GAM and SAM based on WHZ and MUAC cut off's (and/or oedema) and by district																				
Province		Combined	Achham		Baitadi		Bajhang		Bajura		Dadeldhura		Darchula		Doti		Kailali		Kanchanpur	
N			N		N		N		N		N		N		N		N		N	
1727			148		155		108		94		79		71		143		493		436	
273	15.80%	GAM	20	12.80%	15	9%	13	11.10%	12	11.70%	12	15.20%	10	11.30%	24	15.40%	91	18.90%	76	19%
36	2.10%	SAM	2	1.40%	1	0%	2	1.90%	3	1.10%	1	1.30%	1	0%	3	2.10%	13	3.20%	9	2.80%

Table 13. Disaggregated Prevalence of underweight according to district.

Prevalence of underweight based on weight-for-age z-scores by district																			
Province			Achham		Baitadi		Bajhang		Bajura		Dadeldhura		Darchula		Doti		Kailali		Kanchanpur
N		WAZ	N		N		N		N		N		N		N		N		N
1708			146		153		106		94		79		71		143		491		425
435	25.5%	**Underweight**	34	23.3%	40	26.1%	28	26.4%	29	30.9%	18	22.8%	20	28.2%	51	35.7%	116	23.6%	128	30.1%
353	20.7%	**Moderate underweight**	26	17.8%	34	22.2%	21	19.8%	21	22.3%	14	17.7%	17	23.9%	43	30.1%	93	18.9%	110	25.9%
82	4.8%	**Severe underweight**	8	5.5%	6	3.9%	7	6.6%	8	8.5%	4	5.1%	3	4.2%	8	5.6%	23	4.7%	18	4.2%

Table 14. Disaggregated Prevalence of stunting according to district.

Prevalence of stunting based on height-for-age z-scores and by district																			
Province			Achham		Baitadi		Bajhang		Bajura		Dadeldhura		Darchula		Doti		Kailali		Kanchanpur
N		HAZ	N		N		N		N		N		N		N		N		N
1665			146		148		102		94		76		70		143		476		415
421	25.3%	**Stunting**	44	30.1%	42	38.4%	37	36.3%	44	46.8%	23	30.3%	23	32.9%	39	27.3%	93	19.5%	81	19.5%
336	20.2%	**Moderate stunting**	34	23.3%	35	23.6%	28	27.5%	35	37.2%	20	26.3%	15	21.4%	28	19.6%	74	15.5%	67	16.1%
85	5.1%	**Severe stunting**	10	6.8%	7	4.7%	9	8.8%	9	9.6%	3	3.9%	8	11.4%	11	7.7%	19	4%	14	3.4%

6.3 Household-Level Findings

Table 15. Average Household Dietary Diversity Score (HDDS)

Variable	Mean	95% CI	Obs.	SD	Min	Max
HDDS	7.96	(7.8, 8.1)	4,248	1.58	2	12

* Maximum HDDS is 12

The Household Dietary Diversity Score (HDDS) was assessed as a proxy indicator of food security across 4,248 households. The mean HDDS was found to be 7.96 (95% CI: 7.8–8.1), with a standard deviation of 1.58, ranging from a minimum of 2 to a maximum of 12 food groups. These findings indicate that most households consumed a relatively diverse range of food items **(Table 15)**.

Table 16. Consumption of Micronutrient Rich Foods by Households

Level	Freq.	Proportion	95% CI
Proportion of households consuming either a plant or animal source of vitamin A	3,618	85.2%	(83.1%, 87.0%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	1,398	32.9%	(30.5%, 35.4%)

Consumption of micronutrient-rich foods was also examined. A substantial proportion (85.2%; 95% CI: 83.1%–87.0%) of households reported consuming at least one plant- or animal-based source of vitamin A. However, only 32.9% (95% CI: 30.5%–35.4%) of households reported consuming haem iron–rich foods such as organ meat, flesh meat, or seafood. This highlights a significant gap in the intake of iron-rich food sources at the household level **(Table 16)**.

6.4   Child-Level Nutrition and Health Indicators

More than half of the children aged 6-23 months (55%) had received Baalvita supplementation. However, 41% had not received it, and 4% of mothers/caretakers reported not knowing whether their child had received it **(Figure 7)**.
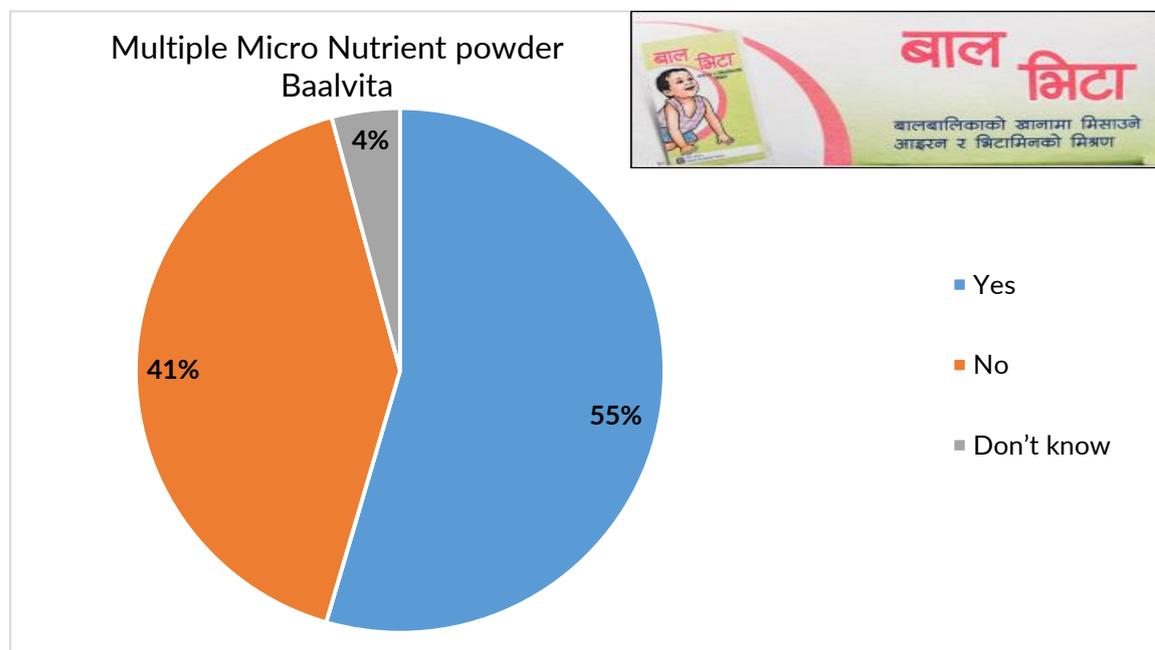
Figure 7. Multiple micronutrient powder coverage

Overall, 98% of children were reported as fully immunized, while 2% were not fully immunized. Among fully immunized children, 73% had their immunization status confirmed by vaccination cards, whereas 27% was based on mother or caretaker report **(Figure 8)**.
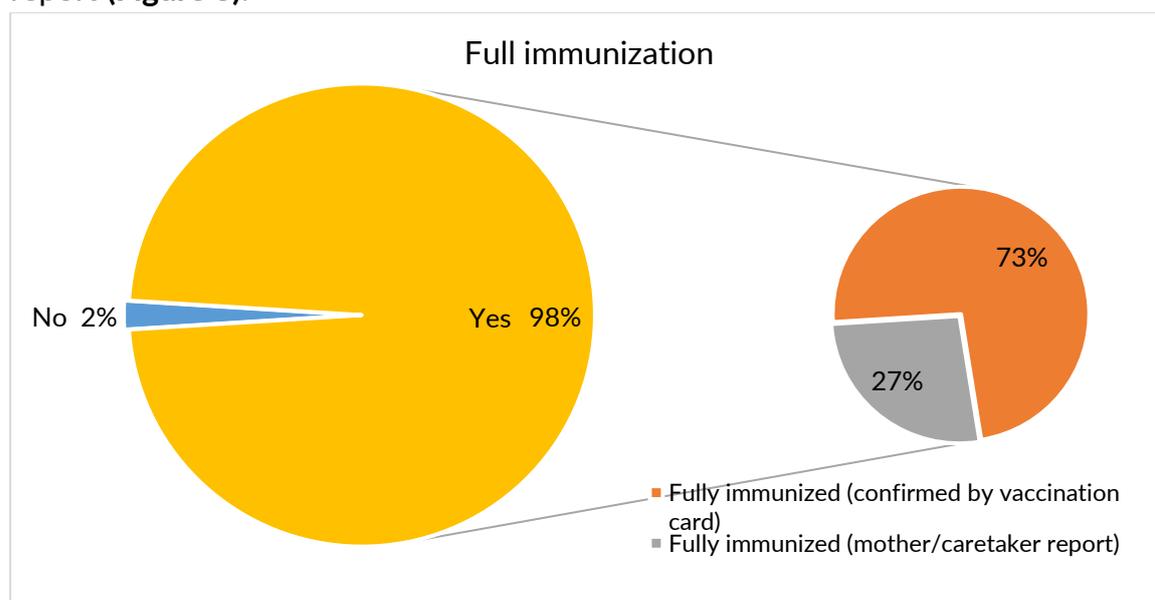
Figure 8. Immunization coverage

The figure shows that 94% of children aged 0–23 months received growth monitoring, while 6% did not. Over the two-year period, children attended an average of eight growth monitoring visits. Among monitored children, 83% of records were verified using child health cards and 17% were based on mother or caretaker reports **(Figure 9)**.
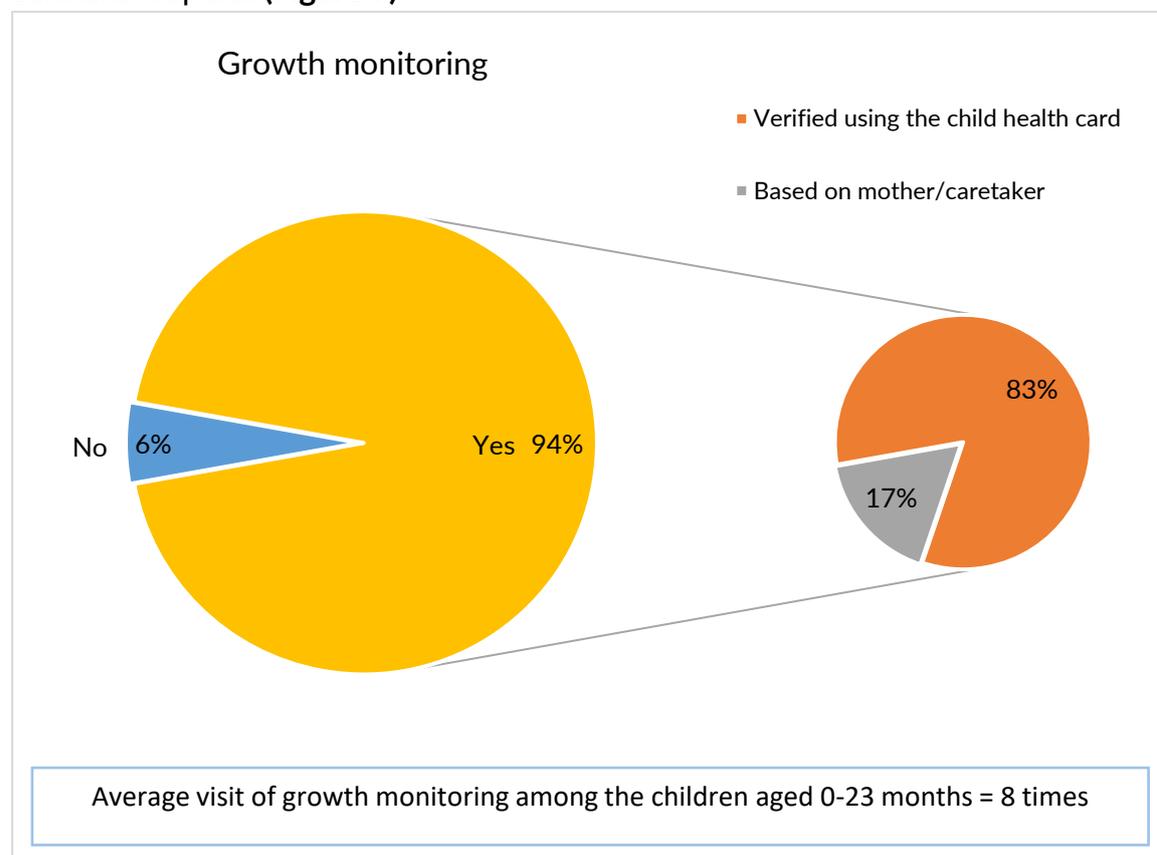
Figure 9. Growth monitoring coverage

6.5 Infant and Young Child Feeding (IYCF) Practices

Table 17. Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Freq	Proportion	95% CI
Breastfeeding Indicators				
Ever breastfed	0-23 months	754	98.2%	(96.9%, 99.0%)
Early Initiation	0-23 months	652	84.9%	(81.7%, 87.6%)
Exclusively breastfed for the first 2 days after birth	0-23 months	608	79.2%	(75.5%, 82.4%)
Exclusive breastfeeding under 6 months	0-5 months	114	68.3%	(60.8%, 74.9%)
Mixed milk feeding under 6 months	0-5 months	17	10.2%	(6.5%, 15.6%)
Continued breastfeeding	12-23 months	370	92.5%	(89.5%, 94.7%)

Indicator	Age range	Freq	Proportion	95% CI
Complementary Feeding Indicators				
Introduction of solid, semi-solid or soft foods	6-8 months	105	89.7%	(82.0%, 94.4%)
Minimum dietary diversity	6-23 months	378	62.9%	(57.9%, 67.7%)
Minimum meal frequency	6-23 months	340	56.6%	(51.2%, 61.8%)
Minimum milk feeding frequency for non-breastfed children	6-23 months	17	44.7%	(28.7%, 61.9%)
Minimum acceptable diet	6-23 months	226	37.6%	(33.0%, 42.4%)
Egg and/or flesh food consumption	6-23 months	197	32.8%	(28.7%, 37.2%)
Sweet beverage consumption	6-23 months	261	43.4%	(38.4%, 48.6%)
Unhealthy food consumption	6-23 months	236	39.3%	(34.5%, 44.2%)
Zero vegetable or fruit consumption	6-23 months	189	31.4%	(26.8%, 36.4%)
Other Indicators				
Bottle feeding	0-23 months	128	16.7%	(13.7%, 20.2%)

Breastfeeding practices were generally strong. Among children aged 0–23 months, 98.2% had ever been breastfed. Early initiation of breastfeeding (within one hour of birth) was reported for 84.9% of children. Additionally, 79.2% were exclusively breastfed during the first two days after birth. However, exclusive breastfeeding among infants under 6 months was lower, at 68.3%, while 10.2% of infants in this age group were reported to have received mixed milk feeding. Continued breastfeeding among children aged 12–23 months remained high at 92.5%.

Complementary feeding practices revealed mixed results. Among infants aged 6–8 months, 89.7% had been introduced to solid, semi-solid, or soft foods. For children aged 6–23 months, 62.9% met the minimum dietary diversity criteria, and 56.6% achieved the minimum meal frequency. However, only 44.7% of non-breastfed children in this age group met the minimum milk feeding frequency. Notably, just 37.6% of children met the minimum acceptable diet standard.

Other relevant feeding behaviors were also documented. Egg and/or flesh food consumption was reported in 32.8% of children aged 6–23 months. On the other hand, consumption of sweet beverages 43.4% and unhealthy foods 39.3% was relatively high. Additionally, 31.4% of children did not consume any fruits or vegetables. Bottle feeding was reported in 16.7% of children under 2 years of age.

7. Conclusion

The SMART+ survey in Sudurpashchim Province reveals a significant burden of malnutrition among children aged 6 to 59 months. Stunting affects one in four children (25.3%), indicating a persistent problem of chronic undernutrition, while wasting prevalence (15.8%) falls within the very high category by WHO standards indicating emergency situation in the province. Underweight rates (25.5%) further highlight the persisting challenge as well. MUAC-based wasting prevalence (3.5%) was considerably lower than WHZ estimates, but still signals the need for early identification at community-level and referral for even MAM (by MUAC) cases for confirmation and appropriate management.

Household dietary diversity was generally adequate (mean HDDS: 7.96), but low consumption of haem iron–rich foods (32.9%) suggest micronutrient deficiencies remain a concern. Coverage of micronutrient powder supplementation was 55% in 6-23 months children. While breastfeeding indicators were high, complementary feeding practices lagged, with only 37.6% of children meeting the minimum acceptable diet and 31.4% not consuming any vegetables or fruits. These gaps indicate that both household food availability and child feeding practices require improvement.

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8. Recommendations

Based on the SMART+ Survey 2025 findings, here are clear and actionable recommendations:

1. **Urgently address acute malnutrition**

   - Expand nutrition programs to treat and prevent wasting (acute malnutrition) in children in the province as the prevalence rate is in very high category.
   - Strengthen outpatient therapeutic care services for acute malnutrition management.
   - Increase active mass screening at local levels for early identification and strengthen referral services for appropriate management.
   - Prioritize MAM management services at all local levels to prevent the deterioration of moderate acute malnutrition cases to severe acute malnutrition.
   - Link the MSNP programs and direct it to support families with acutely malnourished children.
   - Promote private sectors engagement in nutrition initiatives.
2. **Improve feeding practices for young children**

   - Promote better complementary feeding after 6 months: encourage diverse foods, more frequent meals, and continued breastfeeding.
   - Train health workers and mothers' groups to teach families simple, affordable ways to improve children's diets.
   - Increase access to essential nutrition services and counselling.
3. **Strengthen multi-sector collaboration**

   - Work together across health, agriculture, water/sanitation, and social protection sectors to tackle root causes like food insecurity, poor hygiene, and poverty. Fully implement the provincial Multi-Sector Nutrition Plan.
4. **Targeted support to identified high-risk areas**

   - Focus extra resources and programs on mountainous districts and vulnerable communities showing higher malnutrition rates.
   - Continue regular monitoring
5. **Evidence generation**

   - Conduct follow-up nutrition surveys every 2 years to track progress and adjust programs as needed.
   - Conduct follow up studies/researches to identify determinants, causal analysis and gap analysis of malnutrition at local levels.
   - Advocate for more increase funding and priority for nutrition.

9. Annexes

Annex 1 – Photo

Segmentation of the clusters

Cluster control forms

Calibration and anthropometry

Glimpses from the field

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Glimpses from the field
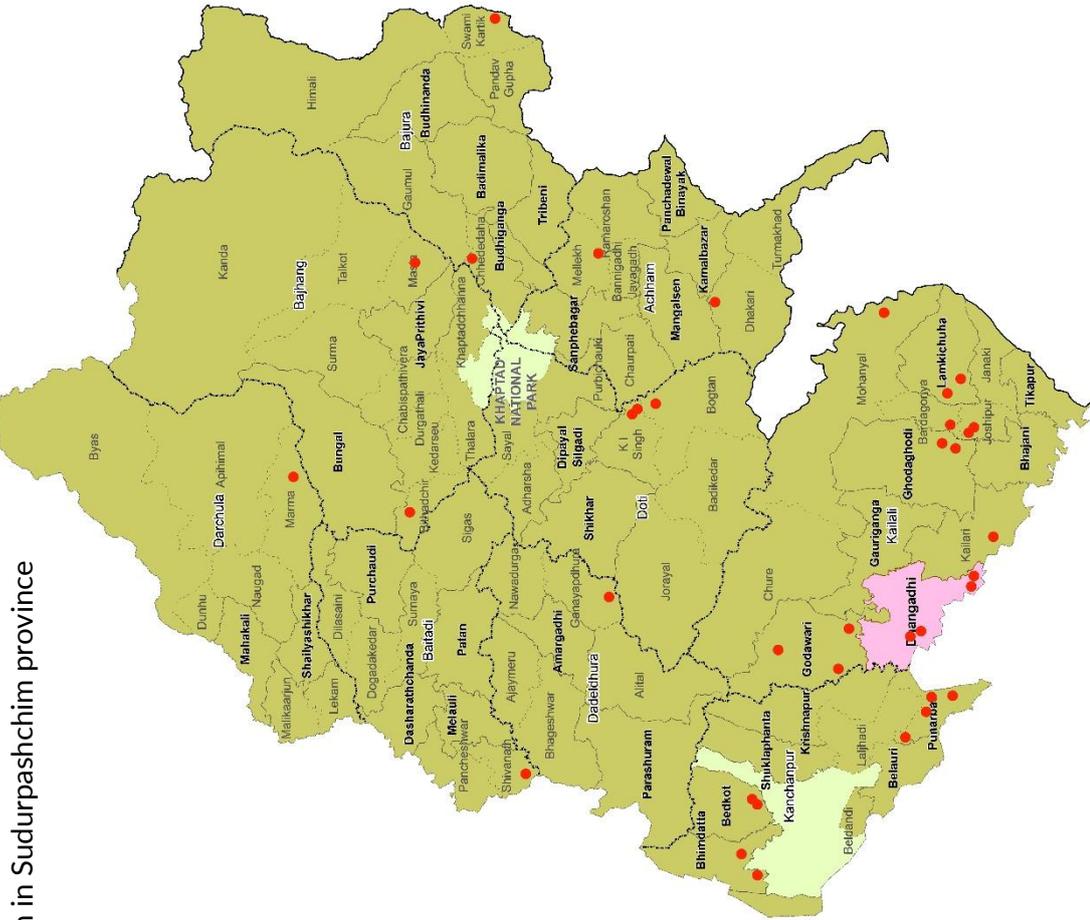
SAM Cases distribution in Sudurpashchim province
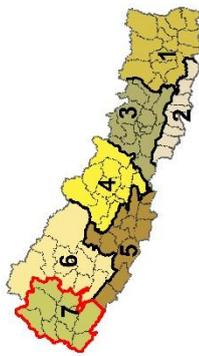
Annex 3 - Cluster Assignment

Geographical Unit	Population Size	Cluster
HimaliGaunpalika-1	1153	
HimaliGaunpalika-2	1222	
HimaliGaunpalika-3	913	
HimaliGaunpalika-4	1261	
HimaliGaunpalika-5	1844	
HimaliGaunpalika-6	2994	1
HimaliGaunpalika-7	707	
GaumulGaunpalika-1	1353	
GaumulGaunpalika-2	1639	
GaumulGaunpalika-3	1277	
GaumulGaunpalika-4	1693	
GaumulGaunpalika-5	1270	2
GaumulGaunpalika-6	1447	
BudhinandaMunicipality-1	2780	
BudhinandaMunicipality-2	1776	
BudhinandaMunicipality-3	2842	
BudhinandaMunicipality-4	2195	3
BudhinandaMunicipality-5	1725	
BudhinandaMunicipality-6	1457	
BudhinandaMunicipality-7	2340	
BudhinandaMunicipality-8	1729	4
BudhinandaMunicipality-9	1746	
BudhinandaMunicipality-10	1652	
SwamikartikKhaparGaunpalika-1	3646	
SwamikartikKhaparGaunpalika-2	2520	5
SwamikartikKhaparGaunpalika-3	3003	
SwamikartikKhaparGaunpalika-4	1967	
SwamikartikKhaparGaunpalika-5	1232	
JagannathGaunpalika-1	2103	
JagannathGaunpalika-2	1609	6
JagannathGaunpalika-3	1314	
JagannathGaunpalika-4	1889	
JagannathGaunpalika-5	1240	
JagannathGaunpalika-6	1904	
BadimalikaMunicipality-1	1747	7
BadimalikaMunicipality-2	1105	
BadimalikaMunicipality-3	967	
BadimalikaMunicipality-4	713	
BadimalikaMunicipality-5	969	
BadimalikaMunicipality-6	2597	
BadimalikaMunicipality-7	2356	RC
BadimalikaMunicipality-8	5170	
BadimalikaMunicipality-9	3010	
KhaptadChhededahaGaunpalika-1	3054	8
KhaptadChhededahaGaunpalika-2	2227	
KhaptadChhededahaGaunpalika-3	2747	
KhaptadChhededahaGaunpalika-4	2579	9
KhaptadChhededahaGaunpalika-5	3619	
KhaptadChhededahaGaunpalika-6	2180	
KhaptadChhededahaGaunpalika-7	2434	
BudhigangaMunicipality-1	2123	10
BudhigangaMunicipality-2	2063	
BudhigangaMunicipality-3	1416	
BudhigangaMunicipality-4	2317	
BudhigangaMunicipality-5	1234	11
BudhigangaMunicipality-6	2269	
BudhigangaMunicipality-7	2214	
BudhigangaMunicipality-8	1753	
BudhigangaMunicipality-9	2092	

BudhigangaMunicipality-10	2820	RC
TribeniMunicipality-1	1775	
TribeniMunicipality-2	1642	
TribeniMunicipality-3	1719	
TribeniMunicipality-4	2462	12
TribeniMunicipality-5	1300	
TribeniMunicipality-6	3411	
TribeniMunicipality-7	1799	
TribeniMunicipality-8	1367	
TribeniMunicipality-9	2458	13
SaipalGaunpalika-1	563	
SaipalGaunpalika-2	397	
SaipalGaunpalika-3	655	
SaipalGaunpalika-4	644	
SaipalGaunpalika-5	289	
BungalMunicipality-1	3275	
BungalMunicipality-2	2512	RC
BungalMunicipality-3	4067	
BungalMunicipality-4	2760	
BungalMunicipality-5	2206	14
BungalMunicipality-6	4069	
BungalMunicipality-7	2678	
BungalMunicipality-8	4173	15
BungalMunicipality-9	2662	
BungalMunicipality-10	2140	
BungalMunicipality-11	2888	16
SurmaGaunpalika-1	1229	
SurmaGaunpalika-2	2710	
SurmaGaunpalika-3	2356	
SurmaGaunpalika-4	2890	17
SurmaGaunpalika-5	1561	
TalkotGaunpalika-1	1846	
TalkotGaunpalika-2	1552	
TalkotGaunpalika-3	1457	
TalkotGaunpalika-4	1567	18
TalkotGaunpalika-5	1714	
TalkotGaunpalika-6	1666	
TalkotGaunpalika-7	1542	
MastaGaunpalika-1	2505	
MastaGaunpalika-2	2436	19
MastaGaunpalika-3	1571	
MastaGaunpalika-4	1527	
MastaGaunpalika-5	1443	
MastaGaunpalika-6	1419	
MastaGaunpalika-7	1922	RC
JayaprithbiMunicipality-1	1709	
JayaprithbiMunicipality-2	686	
JayaprithbiMunicipality-3	2005	
JayaprithbiMunicipality-4	1002	
JayaprithbiMunicipality-5	1391	
JayaprithbiMunicipality-6	1188	
JayaprithbiMunicipality-7	2554	20
JayaprithbiMunicipality-8	1370	
JayaprithbiMunicipality-9	1679	
JayaprithbiMunicipality-10	4686	21
JayaprithbiMunicipality-11	3206	
ChhabisPathibharaGaunpalika-1	1909	
ChhabisPathibharaGaunpalika-2	1854	
ChhabisPathibharaGaunpalika-3	2047	22
ChhabisPathibharaGaunpalika-4	1244	
ChhabisPathibharaGaunpalika-5	2177	

Geographical Unit	Population Size	Cluster
ChhabisPathibharaGaunpalika-6	2129	
ChhabisPathibharaGaunpalika-7	2540	
DurgathaliGaunpalika-1	1114	RC
DurgathaliGaunpalika-2	1382	
DurgathaliGaunpalika-3	1517	
DurgathaliGaunpalika-4	1338	
DurgathaliGaunpalika-5	2166	
DurgathaliGaunpalika-6	1495	
DurgathaliGaunpalika-7	1807	23
KedarsyunGaunpalika-1	2912	
KedarsyunGaunpalika-2	1605	
KedarsyunGaunpalika-3	1591	
KedarsyunGaunpalika-4	2509	24
KedarsyunGaunpalika-5	2208	
KedarsyunGaunpalika-6	2683	
KedarsyunGaunpalika-7	2101	
KedarsyunGaunpalika-8	2498	25
KedarsyunGaunpalika-9	2516	
BitthadchirGaunpalika-1	2736	
BitthadchirGaunpalika-2	1816	
BitthadchirGaunpalika-3	1166	
BitthadchirGaunpalika-4	2402	26
BitthadchirGaunpalika-5	1523	
BitthadchirGaunpalika-6	1712	
BitthadchirGaunpalika-7	1492	
BitthadchirGaunpalika-8	931	
BitthadchirGaunpalika-9	3406	27
ThalaraGaunpalika-1	1638	
ThalaraGaunpalika-2	2401	
ThalaraGaunpalika-3	1938	
ThalaraGaunpalika-4	2009	28
ThalaraGaunpalika-5	1504	
ThalaraGaunpalika-6	1206	
ThalaraGaunpalika-7	1504	
ThalaraGaunpalika-8	1419	
ThalaraGaunpalika-9	1848	
KhaptadChhannaGaunpalika-1	1525	29
KhaptadChhannaGaunpalika-2	1564	
KhaptadChhannaGaunpalika-3	1571	
KhaptadChhannaGaunpalika-4	1788	
KhaptadChhannaGaunpalika-5	2076	
KhaptadChhannaGaunpalika-6	1923	30
KhaptadChhannaGaunpalika-7	2530	
ByasGaunpalika-1	245	
ByasGaunpalika-2	1012	
ByasGaunpalika-3	1457	
ByasGaunpalika-4	2622	
ByasGaunpalika-5	1935	31
ByasGaunpalika-6	2346	
DuhunGaunpalika-1	1656	
DuhunGaunpalika-2	2570	
DuhunGaunpalika-3	1635	32
DuhunGaunpalika-4	2068	
DuhunGaunpalika-5	1852	
MahakaliMunicipality-1	2536	
MahakaliMunicipality-2	1774	
MahakaliMunicipality-3	1686	33
MahakaliMunicipality-4	6113	
MahakaliMunicipality-5	5466	34
MahakaliMunicipality-6	1235	
MahakaliMunicipality-7	1445	

Geographical Unit	Population Size	Cluster
MahakaliMunicipality-8	2085	
MahakaliMunicipality-9	2030	35
NaugadGaunpalika-1	2287	
NaugadGaunpalika-2	2533	
NaugadGaunpalika-3	2234	
NaugadGaunpalika-4	3163	36
NaugadGaunpalika-5	1637	
NaugadGaunpalika-6	3597	
ApihimalGaunpalika-1	575	
ApihimalGaunpalika-2	839	37
ApihimalGaunpalika-3	1656	
ApihimalGaunpalika-4	1427	
ApihimalGaunpalika-5	963	
ApihimalGaunpalika-6	1276	
MarmaGaunpalika-1	3570	38
MarmaGaunpalika-2	2320	
MarmaGaunpalika-3	2348	
MarmaGaunpalika-4	2564	
MarmaGaunpalika-5	1752	39
MarmaGaunpalika-6	2557	
ShailyashikharMunicipality-1	2525	
ShailyashikharMunicipality-2	2039	
ShailyashikharMunicipality-3	1671	
ShailyashikharMunicipality-4	2681	40
ShailyashikharMunicipality-5	2197	
ShailyashikharMunicipality-6	2896	
ShailyashikharMunicipality-7	1963	41
ShailyashikharMunicipality-8	2074	
ShailyashikharMunicipality-9	3969	
MalikarjunGaunpalika-1	1165	
MalikarjunGaunpalika-2	1863	RC
MalikarjunGaunpalika-3	2801	
MalikarjunGaunpalika-4	1545	
MalikarjunGaunpalika-5	1739	
MalikarjunGaunpalika-6	1769	
MalikarjunGaunpalika-7	1510	42
MalikarjunGaunpalika-8	3083	
LekamGaunpalika-1	2337	
LekamGaunpalika-2	2303	
LekamGaunpalika-3	1784	43
LekamGaunpalika-4	2679	
LekamGaunpalika-5	2544	
LekamGaunpalika-6	2106	
DilasainiGaunpalika-1	3359	44
DilasainiGaunpalika-2	3027	
DilasainiGaunpalika-3	3655	45
DilasainiGaunpalika-4	2617	
DilasainiGaunpalika-5	3610	
DilasainiGaunpalika-6	2604	46
DilasainiGaunpalika-7	3303	
DogadaKedarGaunpalika-1	3655	
DogadaKedarGaunpalika-2	2635	47
DogadaKedarGaunpalika-3	3308	
DogadaKedarGaunpalika-4	2943	
DogadaKedarGaunpalika-5	2781	RC
DogadaKedarGaunpalika-6	3588	
DogadaKedarGaunpalika-7	1523	
DogadaKedarGaunpalika-8	1957	
PuchaundiMunicipality-1	2182	48
PuchaundiMunicipality-2	3041	
PuchaundiMunicipality-3	4368	
PuchaundiMunicipality-4	3848	49
PuchaundiMunicipality-5	5813	
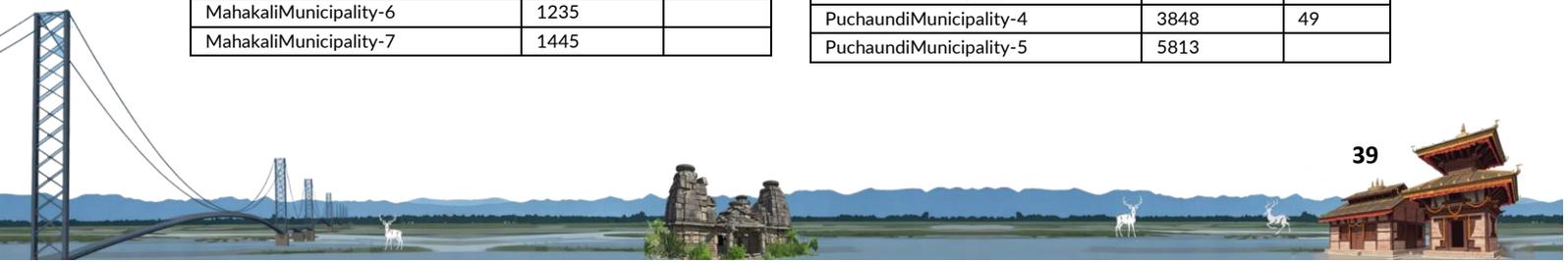
Geographical Unit	Population Size	Cluster
PuchaundiMunicipality-6	4706	50
PuchaundiMunicipality-7	3349	
PuchaundiMunicipality-8	3888	51
PuchaundiMunicipality-9	3027	
PuchaundiMunicipality-10	3879	52
SurnayaGaunpalika-1	1055	
SurnayaGaunpalika-2	2453	
SurnayaGaunpalika-3	1949	
SurnayaGaunpalika-4	3048	
SurnayaGaunpalika-5	2413	53
SurnayaGaunpalika-6	1758	
SurnayaGaunpalika-7	2401	
SurnayaGaunpalika-8	2312	
DasharathchandMunicipality-1	4230	RC
DasharathchandMunicipality-2	4337	
DasharathchandMunicipality-3	1946	54
DasharathchandMunicipality-4	5360	
DasharathchandMunicipality-5	2289	
DasharathchandMunicipality-6	2984	55
DasharathchandMunicipality-7	1462	
DasharathchandMunicipality-8	1763	
DasharathchandMunicipality-9	3984	56
DasharathchandMunicipality-10	1564	
DasharathchandMunicipality-11	1617	
PancheshworGaunpalika-1	3736	
PancheshworGaunpalika-2	1960	57
PancheshworGaunpalika-3	2484	
PancheshworGaunpalika-4	4531	
PancheshworGaunpalika-5	2768	58
PancheshworGaunpalika-6	1770	
ShivanathGaunpalika-1	3859	
ShivanathGaunpalika-2	4419	59
ShivanathGaunpalika-3	1932	
ShivanathGaunpalika-4	2788	
ShivanathGaunpalika-5	2915	60
ShivanathGaunpalika-6	1832	
MelauliMunicipality-1	3836	
MelauliMunicipality-2	2933	61
MelauliMunicipality-3	1907	
MelauliMunicipality-4	1240	
MelauliMunicipality-5	2164	
MelauliMunicipality-6	1717	
MelauliMunicipality-7	3245	62
MelauliMunicipality-8	1692	
MelauliMunicipality-9	1910	
PatanMunicipality-1	3544	
PatanMunicipality-2	2457	RC
PatanMunicipality-3	2485	
PatanMunicipality-4	3284	
PatanMunicipality-5	2410	63
PatanMunicipality-6	5620	
PatanMunicipality-7	2031	
PatanMunicipality-8	2890	64
PatanMunicipality-9	2014	
PatanMunicipality-10	2455	
SigasGaunpalika-1	2535	65
SigasGaunpalika-2	3259	
SigasGaunpalika-3	2338	
SigasGaunpalika-4	1735	
SigasGaunpalika-5	1745	66
SigasGaunpalika-6	2744	

Geographical Unit	Population Size	Cluster
SigasGaunpalika-7	2146	
SigasGaunpalika-8	1982	
SigasGaunpalika-9	2652	RC
NawadurgaGaunpalika-1	3972	
NawadurgaGaunpalika-2	4296	
NawadurgaGaunpalika-3	3020	67
NawadurgaGaunpalika-4	4278	
NawadurgaGaunpalika-5	2722	68
AmargadhiMunicipality-1	2884	
AmargadhiMunicipality-2	2100	
AmargadhiMunicipality-3	1691	
AmargadhiMunicipality-4	1714	RC
AmargadhiMunicipality-5	6541	
AmargadhiMunicipality-6	1503	
AmargadhiMunicipality-7	2204	69
AmargadhiMunicipality-8	1882	
AmargadhiMunicipality-9	1247	
AmargadhiMunicipality-10	1237	
AmargadhiMunicipality-11	1361	
AjayameruGaunpalika-1	2210	70
AjayameruGaunpalika-2	3379	
AjayameruGaunpalika-3	1865	
AjayameruGaunpalika-4	2305	
AjayameruGaunpalika-5	2561	71
AjayameruGaunpalika-6	2421	
BhageshworGaunpalika-1	3041	
BhageshworGaunpalika-2	1849	
BhageshworGaunpalika-3	3439	72
BhageshworGaunpalika-4	2852	
BhageshworGaunpalika-5	1625	
ParashuramMunicipality-1	2647	73
ParashuramMunicipality-2	1076	
ParashuramMunicipality-3	2042	
ParashuramMunicipality-4	4624	
ParashuramMunicipality-5	3214	74
ParashuramMunicipality-6	2300	
ParashuramMunicipality-7	3187	
ParashuramMunicipality-8	2051	75
ParashuramMunicipality-9	3787	
ParashuramMunicipality-10	4087	
ParashuramMunicipality-11	2719	76
ParashuramMunicipality-12	4146	
AalitalGaunpalika-1	2042	
AalitalGaunpalika-2	1439	77
AalitalGaunpalika-3	2939	
AalitalGaunpalika-4	2047	
AalitalGaunpalika-5	1847	
AalitalGaunpalika-6	2357	78
AalitalGaunpalika-7	2099	
AalitalGaunpalika-8	3192	
GanyapdhuraGaunpalika-1	3065	79
GanyapdhuraGaunpalika-2	3089	
GanyapdhuraGaunpalika-3	3333	
GanyapdhuraGaunpalika-4	2014	
GanyapdhuraGaunpalika-5	1959	80
PurbichoukiGaunpalika-1	2539	
PurbichoukiGaunpalika-2	3425	
PurbichoukiGaunpalika-3	3192	81
PurbichoukiGaunpalika-4	2272	
PurbichoukiGaunpalika-5	3501	
PurbichoukiGaunpalika-6	2509	82
PurbichoukiGaunpalika-7	3858	
SayalGaunpalika-1	3514	
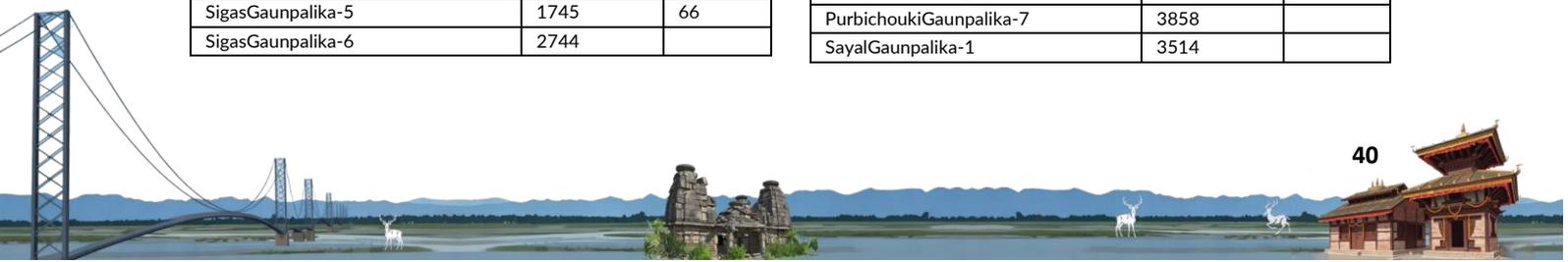
Geographical Unit	Population Size	Cluster
SayalGaunpalika-2	2566	83
SayalGaunpalika-3	3356	
SayalGaunpalika-4	3176	
SayalGaunpalika-5	2999	84
SayalGaunpalika-6	4549	
AadarshaGaunpalika-1	3802	85
AadarshaGaunpalika-2	4309	
AadarshaGaunpalika-3	2936	
AadarshaGaunpalika-4	3373	86
AadarshaGaunpalika-5	3497	
AadarshaGaunpalika-6	4047	87
AadarshaGaunpalika-7	2140	
ShikharMunicipality-1	3777	
ShikharMunicipality-2	2089	88
ShikharMunicipality-3	1589	
ShikharMunicipality-4	3005	
ShikharMunicipality-5	2190	
ShikharMunicipality-6	2803	RC
ShikharMunicipality-7	2206	
ShikharMunicipality-8	2468	
ShikharMunicipality-9	1584	
ShikharMunicipality-10	4569	89
ShikharMunicipality-11	3758	
DipayalSilgadhiMunicipality-1	3823	90
DipayalSilgadhiMunicipality-2	3974	
DipayalSilgadhiMunicipality-3	3437	
DipayalSilgadhiMunicipality-4	5196	91
DipayalSilgadhiMunicipality-5	3985	
DipayalSilgadhiMunicipality-6	3223	92
DipayalSilgadhiMunicipality-7	3529	
DipayalSilgadhiMunicipality-8	3830	93
DipayalSilgadhiMunicipality-9	3861	
K.I.SinghGaunpalika-1	2262	
K.I.SinghGaunpalika-2	3034	94
K.I.SinghGaunpalika-3	3430	
K.I.SinghGaunpalika-4	4009	
K.I.SinghGaunpalika-5	2946	RC
K.I.SinghGaunpalika-6	2308	
K.I.SinghGaunpalika-7	2213	
BogatanPhudsilGaunpalika-1	2783	95
BogatanPhudsilGaunpalika-2	1464	
BogatanPhudsilGaunpalika-3	1748	
BogatanPhudsilGaunpalika-4	2843	
BogatanPhudsilGaunpalika-5	1776	
BogatanPhudsilGaunpalika-6	2404	96
BogatanPhudsilGaunpalika-7	2220	
BadiKedarGaunpalika-1	2493	
BadiKedarGaunpalika-2	2459	97
BadiKedarGaunpalika-3	3205	
BadiKedarGaunpalika-4	3140	
BadiKedarGaunpalika-5	3138	98
JorayalGaunpalika-1	2915	
JorayalGaunpalika-2	4083	
JorayalGaunpalika-3	2670	99
JorayalGaunpalika-4	4841	
JorayalGaunpalika-5	2161	
JorayalGaunpalika-6	2634	100
PanchdebalBinayakMunicipality-1	1326	
PanchdebalBinayakMunicipality-2	2592	
PanchdebalBinayakMunicipality-3	2837	
PanchdebalBinayakMunicipality-4	3071	101

Geographical Unit	Population Size	Cluster
PanchdebalBinayakMunicipality-5	2437	
PanchdebalBinayakMunicipality-6	3501	
PanchdebalBinayakMunicipality-7	2952	102
PanchdebalBinayakMunicipality-8	3714	
PanchdebalBinayakMunicipality-9	3215	
RamaroshanGaunpalika-1	2113	RC
RamaroshanGaunpalika-2	1145	
RamaroshanGaunpalika-3	2579	
RamaroshanGaunpalika-4	3543	103
RamaroshanGaunpalika-5	5589	
RamaroshanGaunpalika-6	4070	104
RamaroshanGaunpalika-7	3165	
MellekhGaunpalika-1	2285	
MellekhGaunpalika-2	2221	
MellekhGaunpalika-3	2448	105
MellekhGaunpalika-4	4206	
MellekhGaunpalika-5	3011	
MellekhGaunpalika-6	3354	106
MellekhGaunpalika-7	3331	
MellekhGaunpalika-8	1411	
SanphebagarMunicipality-1	1071	107
SanphebagarMunicipality-2	1650	
SanphebagarMunicipality-3	3018	
SanphebagarMunicipality-4	3537	
SanphebagarMunicipality-5	1334	108
SanphebagarMunicipality-6	718	
SanphebagarMunicipality-7	1326	
SanphebagarMunicipality-8	1357	
SanphebagarMunicipality-9	1704	
SanphebagarMunicipality-10	2233	
SanphebagarMunicipality-11	1661	109
SanphebagarMunicipality-12	1391	
SanphebagarMunicipality-13	2355	
SanphebagarMunicipality-14	2201	
ChaurpatiGaunpalika-1	4711	110
ChaurpatiGaunpalika-2	3559	
ChaurpatiGaunpalika-3	2620	
ChaurpatiGaunpalika-4	3441	111
ChaurpatiGaunpalika-5	2577	
ChaurpatiGaunpalika-6	2097	
ChaurpatiGaunpalika-7	1601	
MangalsenMunicipality-1	2291	112
MangalsenMunicipality-2	435	
MangalsenMunicipality-3	2721	
MangalsenMunicipality-4	1875	
MangalsenMunicipality-5	4552	113
MangalsenMunicipality-6	1127	
MangalsenMunicipality-7	1525	
MangalsenMunicipality-8	1165	
MangalsenMunicipality-9	1229	
MangalsenMunicipality-10	1137	
MangalsenMunicipality-11	927	114
MangalsenMunicipality-12	2370	
MangalsenMunicipality-13	2686	
MangalsenMunicipality-14	2092	
BannigadhiJayagadhGaunpalika-1	1082	
BannigadhiJayagadhGaunpalika-2	1294	115
BannigadhiJayagadhGaunpalika-3	3811	
BannigadhiJayagadhGaunpalika-4	1408	
BannigadhiJayagadhGaunpalika-5	2040	
BannigadhiJayagadhGaunpalika-6	3051	116
KamalbazarMunicipality-1	2493	
KamalbazarMunicipality-2	1472	
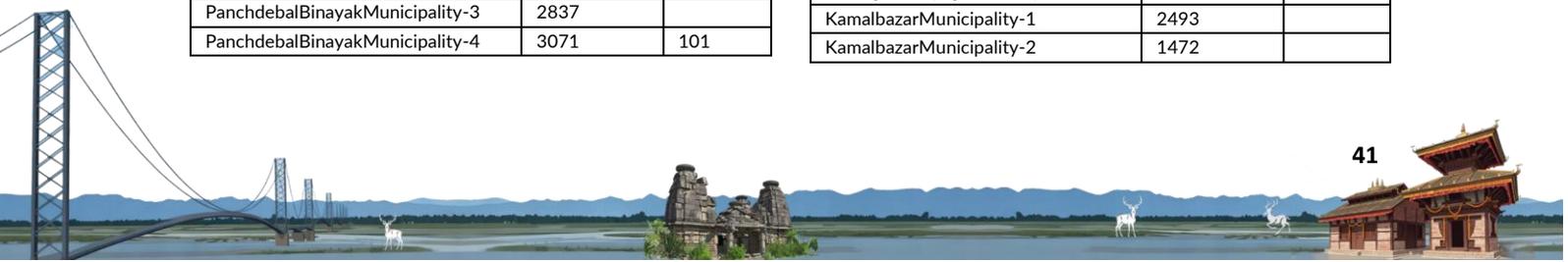
Geographical Unit	Population Size	Cluster
KamalbazarMunicipality-3	1783	
KamalbazarMunicipality-4	2325	117
KamalbazarMunicipality-5	2455	
KamalbazarMunicipality-6	2592	
KamalbazarMunicipality-7	2357	
KamalbazarMunicipality-8	1525	118
KamalbazarMunicipality-9	1649	
KamalbazarMunicipality-10	1967	
DhakariGaunpalika-1	4041	
DhakariGaunpalika-2	1930	119
DhakariGaunpalika-3	3099	
DhakariGaunpalika-4	2147	
DhakariGaunpalika-5	1849	
DhakariGaunpalika-6	3080	120
DhakariGaunpalika-7	2531	
DhakariGaunpalika-8	1903	
TurmakhandGaunpalika-1	3384	121
TurmakhandGaunpalika-2	1298	
TurmakhandGaunpalika-3	4398	
TurmakhandGaunpalika-4	4033	122
TurmakhandGaunpalika-5	2410	
TurmakhandGaunpalika-6	2493	
TurmakhandGaunpalika-7	1906	
TurmakhandGaunpalika-8	3046	123
MohanyalGaunpalika-1	1998	
MohanyalGaunpalika-2	2296	
MohanyalGaunpalika-3	5020	124
MohanyalGaunpalika-4	1828	
MohanyalGaunpalika-5	2884	
MohanyalGaunpalika-6	3490	125
MohanyalGaunpalika-7	3645	
ChureGaunpalika-1	5108	126
ChureGaunpalika-2	2257	
ChureGaunpalika-3	3406	
ChureGaunpalika-4	4182	127
ChureGaunpalika-5	2877	
ChureGaunpalika-6	3781	128
GodawariMunicipality-1	13887	129
GodawariMunicipality-2	13431	130, 131
GodawariMunicipality-3	10518	132
GodawariMunicipality-4	10773	133
GodawariMunicipality-5	7691	134
GodawariMunicipality-6	7827	135
GodawariMunicipality-7	5140	
GodawariMunicipality-8	8578	136
GodawariMunicipality-9	8249	137
GodawariMunicipality-10	4928	RC
GodawariMunicipality-11	4594	
GodawariMunicipality-12	5757	138
GaurigangaMunicipality-1	8748	139
GaurigangaMunicipality-2	4733	
GaurigangaMunicipality-3	5626	140
GaurigangaMunicipality-4	8342	141
GaurigangaMunicipality-5	4805	
GaurigangaMunicipality-6	7022	142
GaurigangaMunicipality-7	6666	RC
GaurigangaMunicipality-8	7033	
GaurigangaMunicipality-9	5294	143
GaurigangaMunicipality-10	4180	RC
GaurigangaMunicipality-11	3708	
GhodaghodiMunicipality-1	13352	144

Geographical Unit	Population Size	Cluster
GhodaghodiMunicipality-2	6675	145
GhodaghodiMunicipality-3	6706	146
GhodaghodiMunicipality-4	10241	RC
GhodaghodiMunicipality-5	7842	147
GhodaghodiMunicipality-6	5211	
GhodaghodiMunicipality-7	4005	148
GhodaghodiMunicipality-8	10743	149
GhodaghodiMunicipality-9	5095	150
GhodaghodiMunicipality-10	8810	151
GhodaghodiMunicipality-11	4890	
GhodaghodiMunicipality-12	3636	152
BardagoriyaGaunpalika-1	8186	
BardagoriyaGaunpalika-2	7775	153
BardagoriyaGaunpalika-3	5106	154
BardagoriyaGaunpalika-4	6364	155
BardagoriyaGaunpalika-5	5688	
BardagoriyaGaunpalika-6	4628	156
LamkiChuhaMunicipality-1	19904	157, 158
LamkiChuhaMunicipality-2	9149	159
LamkiChuhaMunicipality-3	6793	160
LamkiChuhaMunicipality-4	12409	161
LamkiChuhaMunicipality-5	5923	162
LamkiChuhaMunicipality-6	11146	163
LamkiChuhaMunicipality-7	7015	164
LamkiChuhaMunicipality-8	6857	
LamkiChuhaMunicipality-9	7748	RC
LamkiChuhaMunicipality-10	5813	165
JanakiGaunpalika-1	5249	
JanakiGaunpalika-2	5412	166
JanakiGaunpalika-3	5270	167
JanakiGaunpalika-4	5417	
JanakiGaunpalika-5	4602	168
JanakiGaunpalika-6	4370	
JanakiGaunpalika-7	6233	169
JanakiGaunpalika-8	6495	170
JanakiGaunpalika-9	6058	
JoshipurGaunpalika-1	5624	171
JoshipurGaunpalika-2	4752	
JoshipurGaunpalika-3	6295	172
JoshipurGaunpalika-4	4918	173
JoshipurGaunpalika-5	5461	
JoshipurGaunpalika-6	4781	174
JoshipurGaunpalika-7	4425	
TikapurMunicipality-1	47632	175,176, 177,178, RC, RC
TikapurMunicipality-2	7510	
TikapurMunicipality-3	5130	179
TikapurMunicipality-4	4730	
TikapurMunicipality-5	4888	180
TikapurMunicipality-6	4853	181
TikapurMunicipality-7	7118	
TikapurMunicipality-8	5097	182
TikapurMunicipality-9	3584	
BhajaniMunicipality-1	6166	183
BhajaniMunicipality-2	4608	
BhajaniMunicipality-3	6078	RC
BhajaniMunicipality-4	6397	184
BhajaniMunicipality-5	5977	
BhajaniMunicipality-6	5981	185
BhajaniMunicipality-7	5502	186
BhajaniMunicipality-8	6072	
BhajaniMunicipality-9	6511	187
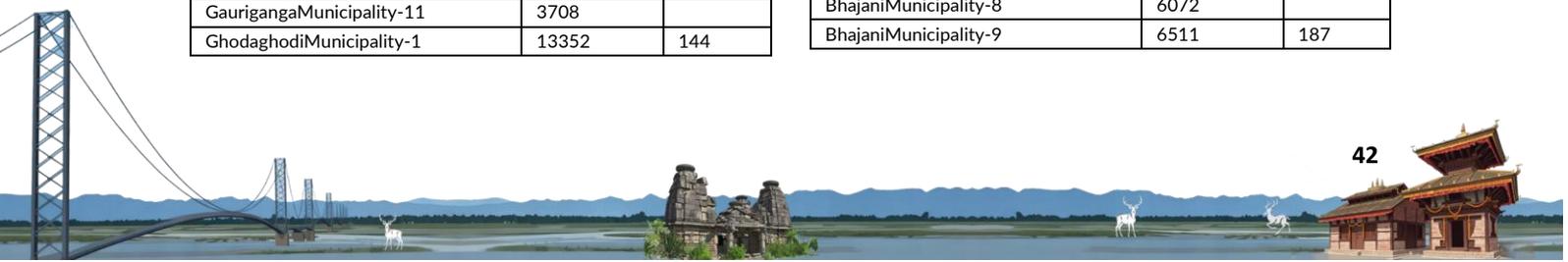
Geographical Unit	Population Size	Cluster
KailariGaunpalika-1	5987	188
KailariGaunpalika-2	4929	
KailariGaunpalika-3	4290	189
KailariGaunpalika-4	4834	
KailariGaunpalika-5	5442	190
KailariGaunpalika-6	5911	191
KailariGaunpalika-7	7014	
KailariGaunpalika-8	5249	192
KailariGaunpalika-9	4881	
DhangadhiSub-MetropolitianCity-1	19450	193,194, RC
DhangadhiSub-MetropolitianCity-2	17366	195, 196
DhangadhiSub-MetropolitianCity-3	22135	197, 198
DhangadhiSub-MetropolitianCity-4	12312	199
DhangadhiSub-MetropolitianCity-5	18572	200, 201
DhangadhiSub-MetropolitianCity-6	7580	202
DhangadhiSub-MetropolitianCity-7	12931	203, 204
DhangadhiSub-MetropolitianCity-8	11771	205
DhangadhiSub-MetropolitianCity-9	4133	
DhangadhiSub-MetropolitianCity-10	4502	RC
DhangadhiSub-MetropolitianCity-11	6413	RC
DhangadhiSub-MetropolitianCity-12	12504	206
DhangadhiSub-MetropolitianCity-13	12559	RC
DhangadhiSub-MetropolitianCity-14	9043	207
DhangadhiSub-MetropolitianCity-15	5700	208
DhangadhiSub-MetropolitianCity-16	5659	209
DhangadhiSub-MetropolitianCity-17	6216	
DhangadhiSub-MetropolitianCity-18	6153	210
DhangadhiSub-MetropolitianCity-19	8240	211
KrishnapurMunicipality-1	9565	212
KrishnapurMunicipality-2	12676	213
KrishnapurMunicipality-3	3489	214
KrishnapurMunicipality-4	11513	215
KrishnapurMunicipality-5	9786	216
KrishnapurMunicipality-6	5990	217
KrishnapurMunicipality-7	8627	218
KrishnapurMunicipality-8	4493	
KrishnapurMunicipality-9	6759	219
ShuklaphantaMunicipality-1	5683	
ShuklaphantaMunicipality-2	2222	220
ShuklaphantaMunicipality-3	2416	
ShuklaphantaMunicipality-4	3680	
ShuklaphantaMunicipality-5	5668	221
ShuklaphantaMunicipality-6	2265	
ShuklaphantaMunicipality-7	5852	222
ShuklaphantaMunicipality-8	6435	223
ShuklaphantaMunicipality-9	2836	
ShuklaphantaMunicipality-10	5230	
ShuklaphantaMunicipality-11	7461	RC
ShuklaphantaMunicipality-12	5340	224
BedkotMunicipality-1	4232	
BedkotMunicipality-2	4560	225
BedkotMunicipality-3	7698	226
BedkotMunicipality-4	5404	
BedkotMunicipality-5	6274	227
BedkotMunicipality-6	4741	228
BedkotMunicipality-7	8460	
BedkotMunicipality-8	4194	229
BedkotMunicipality-9	5044	
BedkotMunicipality-10	7516	230

Geographical Unit	Population Size	Cluster
BhimdattaMunicipality-1	4053	231
BhimdattaMunicipality-2	8102	232
BhimdattaMunicipality-3	7622	
BhimdattaMunicipality-4	6449	233
BhimdattaMunicipality-5	5702	234
BhimdattaMunicipality-6	10243	235
BhimdattaMunicipality-7	5677	236
BhimdattaMunicipality-8	5296	
BhimdattaMunicipality-9	8213	237
BhimdattaMunicipality-10	11292	238
BhimdattaMunicipality-11	4229	239
BhimdattaMunicipality-12	3564	
BhimdattaMunicipality-13	5442	240
BhimdattaMunicipality-14	3120	
BhimdattaMunicipality-15	4695	241
BhimdattaMunicipality-16	3495	
BhimdattaMunicipality-17	2226	
BhimdattaMunicipality-18	19723	242,243
BhimdattaMunicipality-19	5043	244
DodharaChandaniMunicipality-1	5211	245
DodharaChandaniMunicipality-2	4225	
DodharaChandaniMunicipality-3	5206	246
DodharaChandaniMunicipality-4	4751	
DodharaChandaniMunicipality-5	2600	
DodharaChandaniMunicipality-6	4059	247
DodharaChandaniMunicipality-7	5821	
DodharaChandaniMunicipality-8	3566	248
DodharaChandaniMunicipality-9	3999	
DodharaChandaniMunicipality-10	4216	249
LaljhadiGaunpalika-1	4724	
LaljhadiGaunpalika-2	3578	250
LaljhadiGaunpalika-3	3841	
LaljhadiGaunpalika-4	5427	251
LaljhadiGaunpalika-5	3152	
LaljhadiGaunpalika-6	2968	
PunarbasMunicipality-1	7650	252
PunarbasMunicipality-2	6856	253
PunarbasMunicipality-3	2371	
PunarbasMunicipality-4	4555	254
PunarbasMunicipality-5	7273	255
PunarbasMunicipality-6	5643	
PunarbasMunicipality-7	3298	256
PunarbasMunicipality-8	5035	
PunarbasMunicipality-9	7477	257
PunarbasMunicipality-10	6790	258
PunarbasMunicipality-11	6322	
BelouriMunicipality-1	3185	259
BelouriMunicipality-2	5661	
BelouriMunicipality-3	4603	260
BelouriMunicipality-4	5694	
BelouriMunicipality-5	6240	261
BelouriMunicipality-6	6801	262
BelouriMunicipality-7	3534	
BelouriMunicipality-8	5935	263
BelouriMunicipality-9	5947	264
BelouriMunicipality-10	6858	
BeldandiGaunpalika-1	4523	265
BeldandiGaunpalika-2	6577	266
BeldandiGaunpalika-3	4325	
BeldandiGaunpalika-4	1821	
BeldandiGaunpalika-5	3720	267

Annex 4 - Team Members

Advisory team	Designation
Dr. Hemraj Regmi	Province Secretary, MoSD
Mr. Narendra Singh Karki	Director General, PHTC
Dr. Khagendra Bahadur Bam	Director, HD
Mr. Ramesh Malashi	Section Chief, MoSD
Mr. Lila Bikram Thapa	Chief, Nutrition Section, DoHS
Mr. Deepak Jha	Sr. PHO, Nutrition Section, DoHS
Mr. Phulgendra Prasad Singh	Nutrition Specialist, UNICEF

Technical Team	Designation
Mr. Minraj Joshi	Public Health Inspector, Health Directorate
Mr. Bhojraj Joshi	PHI, Health Directorate
Mr. Dhirendra Nath	PHO, Health Directorate
Mr. Sajjan Yogesh	Nutrition Officer, UNICEF
Mr. Ashish Timalsina	Nutrition Officer, UNICEF
Mr. Shirishman Singh	Project Manager, Helen Keller Intl.
Mr. Ranjan Kapali	Programme Manager. Action Against Hunger

Enumerators' list	District	Supervisor's list
Ms. Ambika Budha	Bajura	
Ms. Parwati Bista	Bajura	
Mr. Badri Sunar	Bajura	Ms. Ganga Khatri,
Mr. Tilak Neupane	Bajura	Mr. Shankar Bist
Mr. Nrip Bahadur Sunar	Bajura	
Mr. Harilal Joshi	Bajura	
Mr. Subash Bohara	Bajhang	
Mr. Suresh okheda	Bajhang	
Mr. Bhaktaraj Pandey	Bajhang	Mr. Deependra Mishra,
Mr. Kamal kumar malla	Bajhang	Mr. Sunil Adhikari
Ms. Sunita Oli	Bajhang	
Mr. Umesh Ratala	Bajhang	
Mr. Dambar Singh Karki	Darchula	
Mr. Dev singh Pharswaan	Darchula	
Mr. Ram Singh Chaisir	Darchula	Mr. Dev Datt Joshi,
Mr. Rajeev Dhami	Darchula	Mr. Ramesh Kunwar
Mr. Basanta Khatri	Darchula	
Ms. Hema Bohara	Darchula	
Mr. Kiran Bahadur Bohara	Baitadi	
Mr. Surendra mahara	Baitadi	
Mr. Narendra Raj Bhattarai	Baitadi	Mr. Harish Prasad Bhatta,
Mr. Bikash Khadka	Baitadi	Mr. Kishor Prakash Luhar
Mr. Jiwan Singh Saud	Baitadi	
Mr. Khakendra Mahata	Baitadi	
Mr. Pratap Singh Nayak	Baitadi	
Mr. Labdev Bhatta	Baitadi	
Mr. Umesh Shahu	Dadeldhura	
Mr. Padam Bhattrai	Dadeldhura	Mr. Bhawan Singh Kunwar,
Mr. Kishor Kumar Pandey	Dadeldhura	

Mr. Hemant Madai	Dadeldhura	Mr. Janak Bahadur Chand
Mr. Bhoj Bahadur Pal	Dadeldhura	
Mr. Hem Raj Ojha	Dadeldhura	
Mr. Naresh Kumar Bohara	Doti	Mr. Suraj Khadka, Mr. Kapil Dev Joshi
Mr. Ram Bahadur Bohara	Doti	
Mr. Dhruva Bahadur Singh	Doti	
Mr. Tek Bahadur Saud	Doti	
Mr. Sher Bahadur Bogati	Doti	
Mr. Lal Dev Sahani	Doti	
Mr. Bhakta Bahadur Tamata	Doti	
Mr. Nanda Bahadur Deuba	Doti	
Mr. Mangal Bahadur Shahi	Achham	Mr. Deependra Joshi, Mr. Tek Bahadur Bist
Mr. Ishwar Raj Dhakal	Achham	
Mr. Pushp Bohara	Achham	
Mr. Kamal Prasad Neupane	Achham	
Mr. Bhupendra Bahadur Budha	Achham	
Mr. Jagat B.K.	Achham	
Mr. Kedar Prasad Joshi	Achham	
Mr. Dhruba Bahadur Bohara	Achham	
Mr. Sagar Karki	Kailali	Ms. Rama Giri, Mr. Binod Dhami
Ms. Kopila Malla	Kailali	
Mr. Bir Bahadur Bohara	Kailali	
Mr. Rabindra Bohara	Kailali	
Mr. Dipak Bahadur Rawal	Kailali	
Ms. Rita Tamang	Kailali	
Ms. Bhawani Kadayat	Kailali	
Mr. Sisir Sharma	Kailali	
Mr. Farendra Raj Kushmi	Kailali	
Ms. Radha Kathayat	Kailali	
Ms. Kushum Chaudhary	Kailali	
Mr. Puspa Raj Upadhaya	Kailali	
Mr. Prakash Thapa Magar	Kailali	
Ms. Bandana Pun Magar	Kailali	
Mr. Narendra Thyayat	Kailali	
Ms. Rekha Bajgain	Kailali	
Mr. Laxmi Narayan pokhrel	Kailali	
Ms. Punam Saud	Kailali	
Mr. Narendra Kathariya	Kailali	
Mr. Niranjan Kushmi	Kailali	
Mr. Binod Kathayat	Kailali	
Mr. Pramod Kathariya	Kailali	
Mr. Madan Saud	Kanchanpur	Mr. Pankaj Kalauni, Mr. Khagendra Karki,
Ms. Manju Karki	Kanchanpur	
Mr. Bharat Bista	Kanchanpur	
Ms. Dileshowori Awasthi	Kanchanpur	
Mr. Indra Singh Karki	Kanchanpur	
Mr. Toya Raj Bhatta	Kanchanpur	
Mr. Pallav Raj Joshi	Kanchanpur	
Mr. Jagadish Bhatta	Kanchanpur	
Mr. Hira Bhandari	Kanchanpur	
Mr. Govinda Dhami	Kanchanpur	
Ms. Sita Kumari Rana	Kanchanpur	
Ms. Rupa Khatri	Kanchanpur	
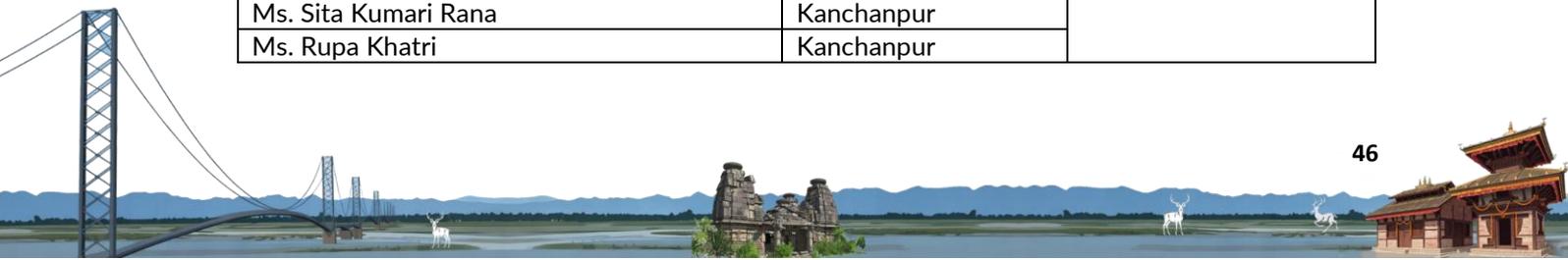
Annex 5 – Local Event Calendar

Season & Agricultural calendar	Religious Holidays/National Holidays	National Events	Nepali Date	Month / Year
	Local Events Calendar **Date of Data Collection: May 2025**			
Cold season	Udhauli Parba/ Yomari Punhi/Christmas/ International disability day	Tamu Loshar,Poush 15, Bhuwa Parba	Mangsir-Paush 2081	December 2024
Cold season	Tihar/Bhaitika Chhat/ Guru Nanak Day	Brischik Sankranti	Kartik-Mangsir 2081	November 2024
Dry season	Dashain/Kojagrat Purnima/Jitiya Parba		Ashwin-Kartik 2081	October 2024
Dry season	Rishi Panchanmi (Teej)/ Indra Jatra/ Krishna Astami/Sambidhan diwas	Atwari Parba	Bhadra-Ashwin 2081	September 2024
Rainy season	Janai Purnima/Gai Jatra	Shree Krishna Janmastami, Olkey Parba,Gaura Parba	Shrawan-Bhadra 2081	August 2024
Rainy season	Eid ul Fitr		Ashar-Shrawan 2081	July 2024
Rainy season	Ashar 15 (Dahi Chiura)		Jestha -Ashar 2081	June 2024
Dry season	Ganatantra diwas/Buddha Jayanti/Labour Day	Ubhauli Parba	Baisakh-Jestha 2081	May 2024
Dry season	Nepali new year 2081/Ram Navami	Ghode Jatra, Bishu, chaite Dashain	Chaitra-Baisakh 2081/80	April 2024
Dry season	Shivaratri/Naari diwas/Gyalpo Loshar	Holi, Khakhadehara	Falgun-Chaitra 2080	March 2024
Cold season	Shree Panchami/Democracy Day	Sonam Loshar	Magh-Falgun 2080	February 2024
Cold season	Maghi/Sahid Diwas/Prithivi Jayanti/English New Year		Paush-Magh 2080	January 2024
Cold season	Udhauli Parba/ Yomari Punhi/Christmas	Tamu Loshar	Mangsir-Paush 2080	December 2023
Cold season	Tihar/BhaitikaChhat/ Guru Nanak Day	Brischik Sankranti	Kartik-Mangsir 2080	November 2023
Dry season	Dashain/Kojagrat Purnima/Jitiya Parba		Ashwin-Kartik 2080	October 2023
Dry season	Rishi Panchanmi (Teej)/ Indra Jatra/ Krishna Astami/Sambidhan diwas	Bakar Id	Bhadra-Ashwin 2080	September 2023
Rainy season	Janai Purnima/Gai Jatra	Gaura Parba	Shrawan-Bhadra 2080	August 2023
Rainy season	Karkat Sankranti		Ashar-Shrawan 2080	July 2023
Rainy season	Ashar 15 (Dahi Chiura Khane Din)		Jestha -Ashar 2080	June 2023

Dry season	Buddha Jayanti/Republic Day/ Ganatantra Diwas	Ubhauli Parba	Baisakh-Jestha 2080	May 2023
Dry season	Nepali New Year 2080/Loktantra Diwas		Chaitra-Baisakh 2080/79	April 2023
Dry season	Holi		Falgun-Chaitra 2079	March 2023
Cold season	Maha Shivaratri	Democracy Day	Magh-Falgun 2079	February 2023
Cold season	Maghe Sankranti/Shree Panchami/English New Year	Sonam Loshar	Paush-Magh 2079	January 2023
Cold season	Christmas Day	Yomari Punhi/Tamu Loshar	Mangsir-Paush 2079	December 2022
Cold season	Haribodhini Ekadasi		Kartik-Mangsir 2079	November 2022
Dry season	Dashain, Tihar	Chhat	Ashwin-Kartik 2079	October 2022
Dry season	Ghatasthapana / Indra Jatra		Bhadra-Ashwin 2079	September 2022
Rainy season	Janai Purnima/Teej/Rishi panchami	Shree Krishna Janmastami	Shrawan-Bhadra 2079	August 2022
Rainy season	Guru Purnima		Ashar-Shrawan 2079	July 2022
Rainy season	Ashar 15 (Dahi Chiura Khane Din)		Jestha -Ashar 2079	June 2022
Dry season	Buddha Jayanti	Ganatantra diwas	Baisakh-Jestha 2079	May 2022
Dry season	Ram Navami/Lokatantra Diwas	Nepali New Year	Chaitra-Baisakh 2079/78	April 2022
Dry season	Holi/Gyalpo Loshar	Ghode Jatra	Falgun-Chaitra 2078	March 2022
Cold season	Shree Panchami/Maha Shiva ratri	Democracy Day	Magh-Falgun 2078	February 2022
Cold season	English New Year/Sahid Diwas	Mage Sankranti	Paush-Magh 2078	January 2022
Cold season	Christmas Day	Yomari Punhi/Tamu Lohsar	Mangsir-Paush 2078	December 2021
Cold season	Tihar/Bhaitika Chhat/ Guru Nanak Day		Kartik-Mangsir 2078	November 2021
Dry season	Dashain/Jitiya Parba		Ashwin-Kartik 2078	October 2021
Dry season	Teez		Bhadra-Ashwin 2078	September 2021
Rainy season	Eid ul Fitr/Janai Purnima/ Shree Krisna Janmasthami		Shrawan-Bhadra 2078	August 2021
Rainy season	Bhanu Jayanti		Ashar-Shrawan 2078	July 2021
Rainy season	Ashar 15 (Dahi Chiura Khane Din)		Jestha -Ashar 2078	June 2021
Dry season	Bhddha Jayanti/ Ganatantra Dibosh		Baisakh-Jestha 2078	May 2021
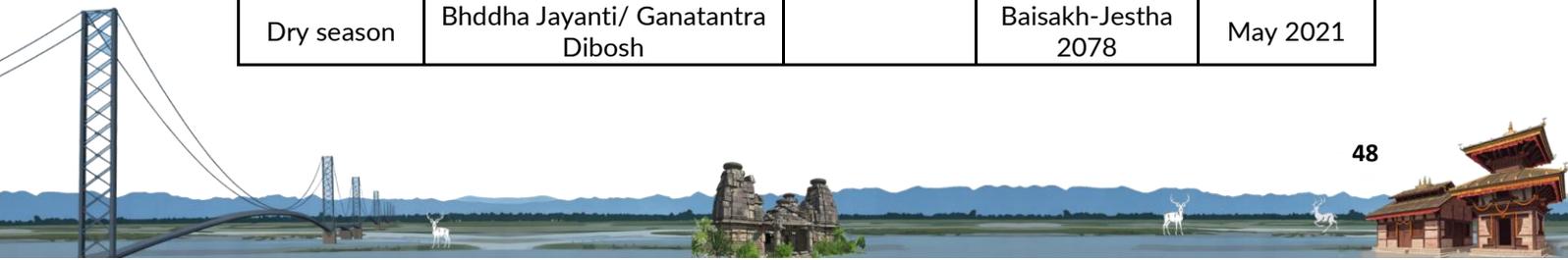
Dry season	Shivaratri	Chaite dashain (Ramnawami)	Chaitra-Baisakh 2078/77	April 2021
Dry season	Gyalbo loshar	Holi	Falgun-Chaitra 2077	March 2021
Cold season	Prajatantra Diwas/Mahashivaratri		Magh-Falgun 2077	February 2021
Cold season	Sonam loshar/English New Year/Prithvi Jayanti	Maghi	Paush-Magh 2077	January 2021
Cold season	Christmas Day		Mangsir-Paush 2077	December 2020
Cold season	Dipawali/Tihar		Kartik-Mangsir 2077	November 2020
Dry season	Ghatasthapana	Dashain/Chhat	Ashwin-Kartik 2077	October 2020
Dry season	Teez	Dashain	Bhadra-Ashwin 2077	September 2020
Rainy season	Krishna Janmastami/ Raksha bandhan		Shrawan-Bhadra 2077	August 2020
Rainy season	Bhanu Jayanti		Ashar-Shrawan 2077	July 2020
Rainy season	Ashar 15 (Dahi Chiura Khane Din)		Jestha -Ashar 2077	June 2020
Dry season	Ganatantra Diwas		Baisakh-Jestha 2077	May 2020
Dry season	Nepali New Year 2069/ Shivaratri/Mata tirtha aeushi	Chaite Dashain (Ramnawami)	Chaitra-Baisakh 2077/76	April 2020

Annex 6 – Survey Team Job Description

Each survey team will consist of at least two members, selected with careful attention to the local context, including gender, ethnicity, language, and familiarity with the survey area. At least one woman will be included per team, wherever possible, to support culturally appropriate engagement with respondents. Teams will also include individuals who are physically capable of carrying and handling equipment, such as height boards and weighing scales.

All survey team members must have the following qualifications:
- Ability to read and write in the main language of the survey and speak local languages used in the survey areas.
- Minimum educational level sufficient to read, write, and count accurately.
- Physically able to walk long distances and carry measuring tools and other field equipment.

Note: Team members do not need to be health professionals. Individuals from the community who meet the above criteria and can be trained are eligible.

Survey Manager

Skills and required abilities:

- A university degree in nutrition, public health, or a related field, with specific knowledge of humanitarian nutrition programming.
- Demonstrated experience in conducting nutrition surveys, including:
  - Methodology design and planning
  - Team recruitment and training
  - Sample size calculation and sampling strategy
  - Field supervision and troubleshooting
  - Data analysis and report writing
- Proficiency with SMART methodology, ENA for SMART, and Epi Info software.
- Strong English writing and presentation skills; proficiency in Nepali or other local languages is highly desirable.

For digital/mobile data collection:
  - Experience using smartphones and mobile data collection platforms such as ODK.
  - Ability to troubleshoot mobile survey platforms and ensure proper handling and transfer of digital data.
  - If the survey manager lacks prior experience with mobile data collection, training and technical support will be provided by ACF HQ or the Mission Office.

Tasks:

Core Responsibilities and Tasks:

The Survey Manager ensures full adherence to SMART survey methodology and holds overall responsibility for successful implementation of the survey. Key responsibilities include:

- **Planning and Preparation:**
  - Gather relevant contextual information for survey planning.
  - Select and recruit qualified team members.
  - Organize and deliver comprehensive training for all team members.
- **Supervision and Quality Control:**
  - Oversee field data collection, ensuring accuracy, completeness, and team safety.
  - Visit survey teams regularly to ensure:
    - All data collection forms are properly completed before teams leave the field.
    - Teams revisit households with absent eligible participants at least twice before marking them as absent.
  - Pay close attention to oedema detection, especially as team members may not encounter oedema cases during training. Personally, verify oedema cases reported by teams, particularly when multiple cases are identified.
  - Ensure households are selected according to protocol, and that anthropometric equipment:
    - Is checked daily,
    - Is calibrated each morning,
    - Is used consistently and accurately.
- **Problem Solving:**
  - Address any challenges encountered during fieldwork.
  - Record each issue and decision made, particularly those that result in a change in survey methodology, for inclusion in the final report.
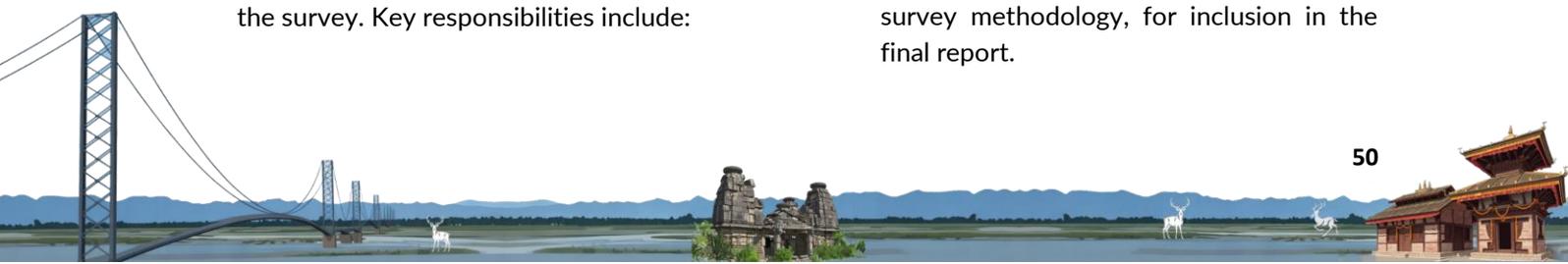
- **Data Management and Monitoring:**
  - Finalize questionnaires in the smartphones (if using MDC methods).
  - Transfer anthropometric data to ENA for SMART daily.
  - Organize data entry using ENA for SMART and Epi Info (for paper-based methods).
  - Conduct daily reviews of suspect or inconsistent data using SMART plausibility checks and other verification tools.
- **Team Support and Communication:**
  - Conduct daily or regular "wrap-up" sessions with each team to review challenges and progress. If teams are spread across a large area, ensure that team leaders are well-trained and empowered to make informed decisions independently.
  - Ensure that teams take appropriate rest periods, are provided with refreshments, and are not overworked. Physical fatigue can lead to data quality issues or failure to reach remote households.
- **Analysis and Reporting:**
  - Analyze data using standard SMART analytical guidance.
  - Present preliminary results and recommendations to key stakeholders and partners.
  - Draft and finalize both the preliminary and final survey reports.

Survey Supervisor

Skills and required abilities:

- Proven ability to read and write clearly, with accurate counting and basic numeracy skills.
- Familiarity with the survey area, including local geography, culture, and language.
- Demonstrated reliability, organization, and interpersonal skills.

**For surveys using smartphones and digital tools:**

- Familiarity with smartphone use and ODK Collect (Open Data Kit).
- Willingness to participate in additional preparation time, if required, to become proficient in mobile data collection systems.

Key Responsibilities:

The Survey Supervisor supports the Survey Manager in ensuring full adherence to the SMART survey methodology and plays a critical role in field supervision and quality control.

- **Field Supervision:**
  - Visit assigned survey teams regularly to ensure proper survey implementation.
  - Confirm that team leaders review all forms and questionnaires before leaving the cluster.
  - Ensure that enumerators make at least two return visits to households where eligible individuals were absent.
- **Quality Control:**
  - Carefully review and verify all oedema cases, especially since training may not expose teams to real cases. Prevent misclassification (e.g., mistaking a well-nourished child for one with oedema).
  - Ensure proper household selection procedures are followed and check that anthropometric equipment is:
    - Checked daily for functionality,
    - Calibrated each morning, and
    - Used and recorded accurately throughout the day.
- **Problem Solving and Documentation:**
  - Respond to challenges or deviations from the planned methodology in real-time.
  - Document all issues and decisions made in the field, including any changes that could affect survey methodology, for inclusion in the final report.
- **Data Support and Technology:**
  - Assist the Survey Manager in:
    - Finalizing digital questionnaires on smartphones,
    - Transferring anthropometric data into ENA for SMART (for mobile data collection),
    - Organizing data entry into ENA for SMART and Epi Info (for paper-based surveys),
    - Checking suspect or unusual data points using SMART plausibility checks and other quality control tools.
- **Daily Debriefings:**
  - Facilitate morning or evening wrap-up sessions with teams to discuss any challenges or updates.
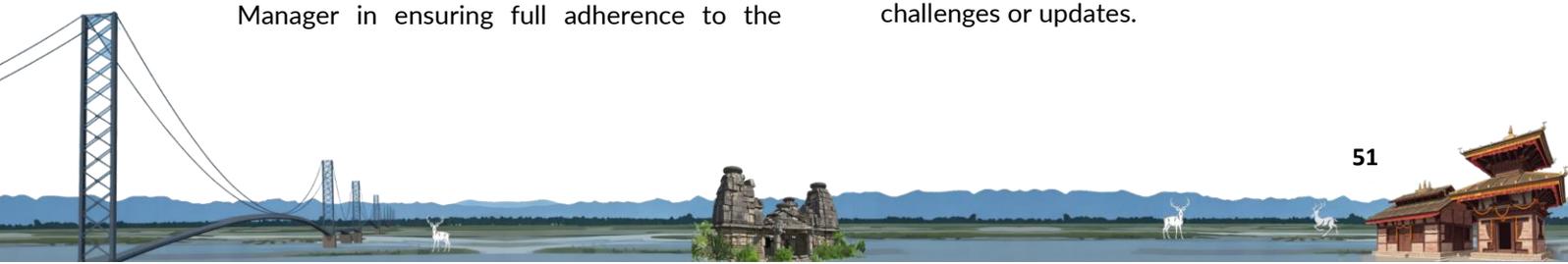
- If daily debriefs are not possible due to geographic spread, maintain regular remote communication and ensure team leaders are empowered to make field-level decisions independently.

- **Team Welfare:**
  o Monitor the workload and well-being of field teams.
  o Ensure teams take regular breaks, have access to refreshments, and avoid fatigue to reduce risk of errors and missed households.

- **Data Analysis (if applicable):**
  o In some contexts, support the Survey Manager in conducting data analysis and contributing to the drafting of the final report.

Team Leader
Skills and required abilities:
  o Demonstrate literacy in reading and writing, with proficiency in basic arithmetic.
  o Familiar with the local area, cultural norms, and community dynamics.
  o Communicative, approachable, and respectful in diverse settings.
 o Reliable, organized, and supportive of teamwork.

If using smartphones:
  o Proficient in smartphone usage and digital data collection platforms (e.g., ODK).
  o Able to troubleshoot basic device issues and assist others as needed.
  o Capable of multitasking while supervising and ensuring accurate digital data capture.

Key Responsibilities /Tasks:
- **Field Preparation & Coordination**
  o Prepare all materials and equipment daily, including forms, smartphones, and anthropometric tools.
  o Calibrate and sanitize measurement equipment each morning following standard protocols.
  o Participate in daily briefing meetings and contribute to planning team tasks and schedules.
  o Manage the team's daily activities, including coordinating interviews, break times, and meals.

o Maintain accountability for all equipment and ensure proper handling and storage.

- **Community Engagement**
  o Interact with local leaders and community members to explain the survey's purpose and procedures.
  o Ensure culturally respectful conduct during household visits and interviews.

- **Household Selection & Sampling**
  o Lead and ensure accurate household selection as per sampling protocol.
  o Support other team members in understanding household selection procedures.

- **Interview and Data Collection**
  o Administer structured questionnaires for:
  o Children's nutrition and health (including vaccination and vitamin A verification).
  o Women's health and demographics.
  o Accurately record data using smartphones or paper tools.
  o Use local events calendars to estimate child or respondent age when official records are unavailable.

- **Anthropometric Assessment**
  o Conduct and oversee nutritional assessments, including:
  o Mid-Upper Arm Circumference (MUAC) measurement.
  o Oedema checks.
  o Height and weight measurements.
  o Complete referral documentation for Severe Acute Malnutrition (SAM) cases as needed.
  o Ensure all measurements are verified and accurate.

- **Quality Assurance and Supervision**
  o Review all completed questionnaires and forms before exiting a cluster or survey area.
  o Supervise interviewers collecting non-anthropometric data, ensuring quality and completeness.
  o Ensure follow-up on any missing or incomplete household data.
  o Provide supportive supervision and guidance to team members.

- **Security, Ethics & Reporting**
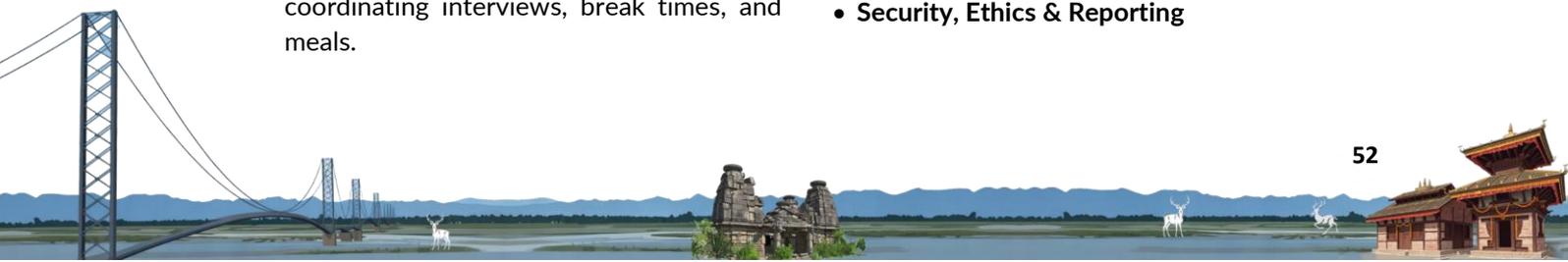
- Uphold all field security protocols and ethical guidelines during interactions with respondents.
- Report any issues, challenges, or concerns to supervisors in a timely manner.
- Prioritize the safety and well-being of all team members while in the field.

Measurer Anthropometry

- Able to read and write and perform basic numeracy tasks.
- Reliable, respectful, and physically able to handle repeated measurements and field conditions.
- Familiar with the local context and comfortable engaging with caretakers and children.

Tasks:

- Measure height/length, weight, and Mid-Upper Arm Circumference (MUAC) of children.
- Assess the presence of bilateral pitting oedema using standardized procedures.
- Use a local events calendar to estimate child age where necessary.
- Ensure all measurements are taken accurately, recorded clearly, and equipment is cleaned and handled with care.
- Respect time allotted for measurements, breaks, and meals.
- Adhere to security and child safeguarding protocols.

The anthropometric measurer must also acquire a working understanding of:

- Household selection procedures.
- Identification of malnutrition based on anthropometric indicators.
- Health card review for vaccination and vitamin A status.
- Referral procedures for children identified as severely malnourished.

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Annex 7 - Survey Team Organogram
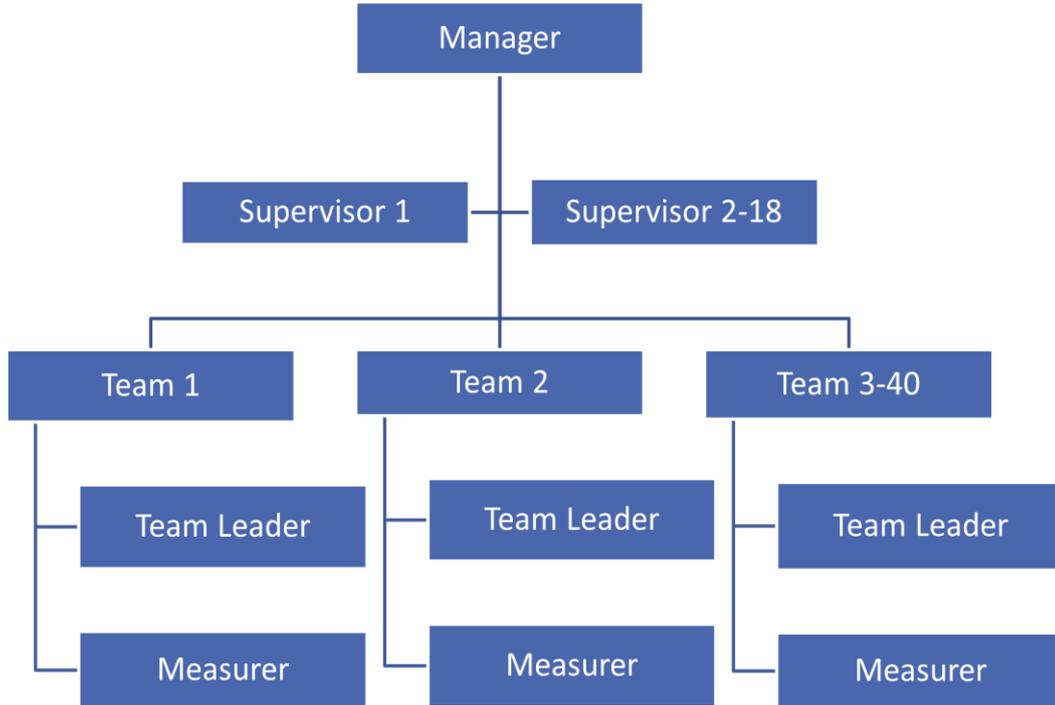
Annex 8 - Cluster Control Form

SMART

ANNEX 4.5

Cluster Control Form

Province: _____ District: _____ Village/Camp: _____ Cluster #: _____ Team number: _____

Date of sampling: _____ / _____ / _____

HH no	Head of HH name	First Visit Outcome 1 = completed 2 = part completed 3 = refused 4 = absent*	Number of eligible children	Number of eligible children measured	Household needs to be revisited Yes or No	Household revisited Yes or No	Second Visit Outcome (If necessary) 1 = completed 2 = part completed 3 = refused 4 = absent	Comments
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

*If household or eligible child are absent, team should re-visit the household once before leaving the village to conduct the interview and/or measure the child.

SMART+ Survey
FINAL REPORT
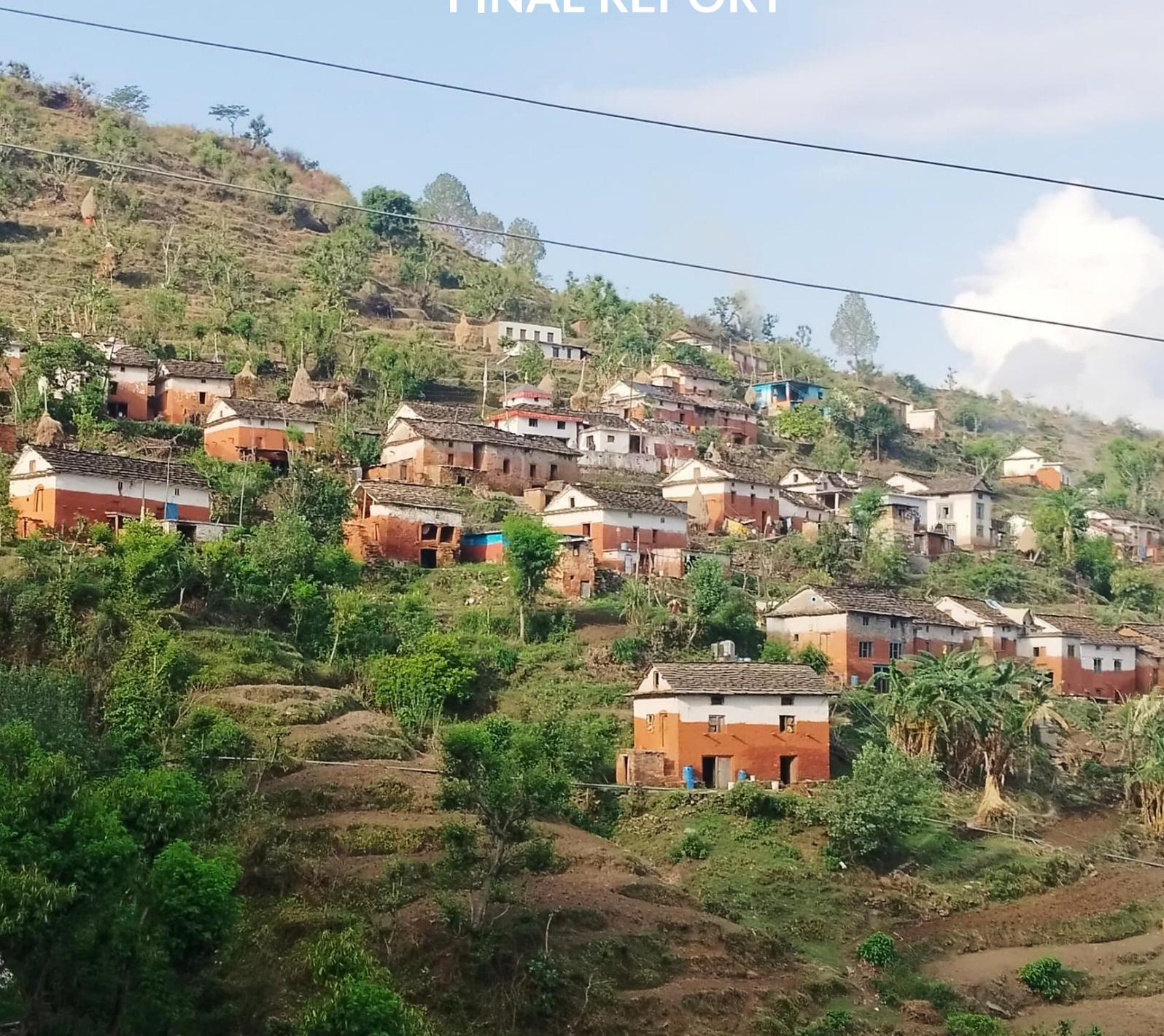
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